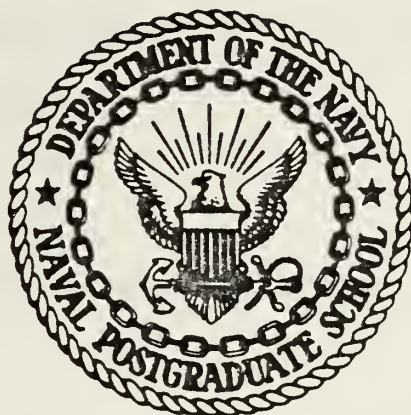


AN ANALYSIS OF MATERIAL DISTRIBUTION
FROM NAVAL SUPPLY CENTER, OAKLAND
TO LOCAL CUSTOMERS

Richard Joseph Wieczorek
and
Lon E. Eastlund

NAVAL POSTGRADUATE SCHOOL

Monterey, California



THESIS

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by

Richard Joseph Wieczorek

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Lon E. Eastlund

December 1979

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This document examines the existing material distribution functions associated with providing supply support to the local customers of the Naval Supply Center, Oakland (NSCO). The analysis is intended to become an integral part in the formulation of a comparison baseline for assessing a proposed general tidewater distribution system.



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Conclusions and recommendations have been made regarding the favorability of the existing delivery method, the overall cost of local delivery, the level of supply support for MINS, the need for more discrete cost data, and the potential for greater cost savings at local industrial activities.

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An Analysis of Material Distribution
from Naval Supply Center, Oakland to Local Customers

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I. INTRODUCTION

Providing an adequate or effective level of supply support for the least total cost has become an increasingly important Navy objective, particularly in the post-Vietnam era of austere defense funding. In view of this cost avoidance objective, physical material distribution systems have often been examined for possible savings. The activities that are encompassed by the broad term distribution include sorting, invoicing and other paperwork, labeling, packing, storing, moving, and shipping.

A. THE PROBLEM

From April 1975 to March 1978 the Department of Defense (DOD) examined the capacity, operational costs, and transportation costs of thirty-four major wholesale supply activities operated by the Army, Navy, Air Force, Marine Corps and the Defense Logistics Agency. That study, known as DOD Material Distribution System Study (DODMDS), essentially determined the number and location of wholesale activities necessary to provide adequate material distribution capacity at the least overall cost /1/. One of the study's recommendations was to merge the management and administration of the Navy distribution facilities in the Oakland, San Diego, and Norfolk areas. Following its own feasibility study conducted as part of the Shore Establishment Realignment (SER V), the Navy (CNO) in mid-1978 approved consolidations of the Naval Supply Centers

(NSC's) and wholesale supply activities of the Naval Air Stations (NAS's) in those three cities /2/.

Presently, the Navy is in the process of implementing the prototype consolidation; NAS Alameda wholesale functions are being transferred to NSCO. Additionally, the Navy favors extending consolidation to other nearby facilities such as shipyards, Naval Air Rework Facilities (NARF's), and Public Works Centers (PWC's). A caveat to any such consolidation or restructuring is that it must not degrade the existing level of supply support, and that a measurable cost savings should be achieved /1/. The task at hand, then, is to develop a general material distribution plan for local area support in the Oakland area; if successful, the plan could be adapted and put into effect at San Diego and Norfolk.

B. INTENT

Before a general material distribution plan can be properly developed, several prerequisite activities must be undertaken, one of which is the documentation of the current system. In other words, a baseline for comparison is needed so that the Navy can assure itself that any newly developed distribution system is, in fact, less costly, and that no degradation in customer support occurs. Toward that end, the intent of this thesis is to describe and analyze the existing material distribution system from NSCO to its local customers in general and to Mare Island Naval Shipyard (MINS) in particular.

C. METHOD OF ANALYSIS

Four distinct areas are discussed and analyzed in the following four chapters. Chapter Two defines the existing material and documents flow to local customers in terms of volumes of business, distances traveled, and time involved. Chapter Three discusses the existing modes and analyzes the possible alternative modes of delivery to local customers. Particular emphasis is placed on the role of the Bay Area Local Delivery (BALD) System. Chapter Four attempts to determine the costs, both direct and indirect, of distribution to local customers. Chapter Five examines one major customer, Mare Island Naval Shipyard, in depth, including its internal material handling operations. Conclusions and recommendations are drawn in the final chapter.

The thesis incorporates a relatively simple method of analysis. By the nature of the problem and because of the lack of discreteness in the data available, quantification of delivery costs attributable to local customers becomes a matter of gross approximation. The comparison "baseline" being sought, then, is addressed in very general terms, and the primary thrust of the thesis is aimed at providing a working description of the existing local distribution system.

The primary source of data was scrutiny of NSCO management reports and statistics. Data were also gathered from PWC San Francisco, Mare Island Naval Shipyard, and previous studies. In addition to numerous phone conversations with the

cognizant persons, several workday visits were made to the Oakland area to obtain reports and to interview the people involved in delivery related activities. Finally, the existing NSCO delivery system was observed in operation in order to gain an appreciation for the gathered information.

II. MATERIAL/DOCUMENT FLOW ANALYSIS

The intent of this chapter is to define the existing materials/document flow to local customers in terms of distances, times, and volume. The most logical place to begin is by describing the document flow through the Naval Supply Center, Oakland. Included are descriptions of how the documents are received by NSCO, how they are processed, and finally how the issue documents are generated and distributed.

Following the general description of document flow, there is a general description of material flow within the Center. In addition, there is a general description that highlights the distances and times relating to the distribution of the material to local customers. A more detailed look at this last area is contained in the next chapter.

Finally, this chapter contains various statistics relating to the volume of business performed at NSCO.

A. DOCUMENT FLOW

Material requirements (i.e., requisitions) are received at NSCO through two main points of contact. The first is the Navy Telecommunication Center (NAVTELCOMCEN), which receives all AUTODIN requisitions. The NAVTELCOMCEN processes the AUTODIN receipts differently depending upon issue group (IG) priority. In the case of IG-I requisitions, the NAVTELCOMCEN provides output in the form of punched cards. These cards are input hourly into NSCO's issue processing program. This

program, referred to as UA-38, is the standard Uniform Automated Data Processing System (UADPS) program prepared by the Fleet Material Support Office (FMSO) that is used at the various supply centers.

In the case of IG-II and III requisitions, the NAVTELCOM-CEN accumulates the requests on reel tape, with the capability of generating punched cards as a back-up, if desired. The reel tape is input into the UA-38 program every four (4) hours at 0330, 0730, 1130, 1530, 1930, and 2330. However, in this particular case, the AUTODIN receipts are run through two local programs prior to being entered into UA-38. Program SF12 validates the tape records, and FC20 sorts AUTODIN demands from other transactions (i.e., follow-ups, modifications, etc.). Both programs impose some processing time delay in starting the issue processing clock, but the delays are not significant enough to cause the issue processing clock to start later than the date actually received.

The issue clock is a management method used to determine how well NSCO is doing in meeting required issue time frames which have been imposed by higher authority. The clock is started when the UA-38 program is run rather than when the requisition is received at the NAVTELCOMCEN for the following reasons. First, the Center does not have any control over NAVTELCOMCEN processing operations. Second, utilizing the UA-38 program as a basis for starting the clock provides the Center with a common denominator for measuring its performance regardless of the method of requisition receipt.

The second point of contact at which requisitions are received is the Inventory Control Department (ICD). Here, requisitions can be received in several forms and via various means. For instance, requisitions may be received via mail, message, telephone or delivered in person. In the case of "in-person" requisitions, these may be of two types. The first type is merely where an individual drops off a requisition for normal processing and it is treated similarly to a request received by mail. The second type is called a "bearer requisition" which means that the individual desires to pick up the material himself. As expected, processing of these various types is handled differently.

In the first instance (mail, message, etc.), the requisitions are viewed by ICD as either standard or non-standard requisitions. Non-standard (those without an NSN) are forwarded to the purchase department. As was the case with the AUTODIN requests, standard requisitions are processed differently depending upon issue group. In the case of IG-I, they are input continuously through the ICD remote terminal into the UA-38 program. IG-II and IG-III requisitions are properly formatted/coded and sent to the Data Processing Department (DPD) for keypunch entry every four (4) hours. Entry by either means starts the issue processing clock.

The last type of request received is the previously mentioned "bearer requisition." These are handled in accordance with the "bearer's" desire regarding pick-up of the material. In the case where the customer desires to take the material

immediately, issue documents are printed at the ICD remote terminal. The customer then carries that document to the appropriate Material Department work site to get his material.

An overnight service for non-emergency bearer requests is called Oak-A-Matic. Requisitions received prior to 1400 are sent to DPD, which keypunches them and delivers issue documents to ICD by 0800 the next morning. Those documents are sent to the Material Department, and the customer is guaranteed that material will be ready for pickup by 1000 that morning.

In summary, with regards to the request entry cycle, all requisitions received during the work day will be input into the UA-38 program by 2330 of that day.

The next phase in the document flow process is that performed by the UA-38 program in preparing the issue documents. As just mentioned, all requisitions are input by 2330 each day. To further insure that all requisitions received are recorded on that day, NSCO has also modified the computer slightly. The modification has placed the computer's internal clock three (3) hours behind the actual wall clock time. This change was made to ensure that all requisitions physically received during a particular calendar day are recorded as received that day in the computer. The computer recorded receipt date starts the issue processing time cycle and is the basis for all reported issue performance statistics.

The last phase in the document flow process is, of course, the preparation of the issue document. This process again differs depending upon the issue group. For IG-I, the issue

documents free-flow from either the main frame computer or various remote terminals in the Material Department every two hours. This ensures the fastest attention to the high priority requests. In the case of IG-II documents, they are collected and printed daily at 0030. On Friday there is a second printing run at 0730. With the exception of Friday, these documents are picked up by Material Department personnel at 0630 in preparation for issue.

In the case of IG-III, they are collected and printed Monday through Friday at 0300. These are also picked up by the Material Department at 0630. There are, however, two exceptions relating to IG-III documents. First, IG-III demands received after 2330 Thursday are included in the Monday morning document printing run (Tuesday morning in cases of a Monday holiday). The issue processing clock, however, is already running on all these requisitions. Second, NSCO's Automated Material Handling System (AMHS) is currently manned to process 4500 line items per day. If total AMHS issues exceed this level, the excess IG-III documents are put into a holding (workload leveling) bank. These requisitions are rolled over daily on a first-in-first-out basis. This bank usually remains empty with the exception of some Monday mornings. The issue processing clock continues running on all documents held in this bank.

That completes the document flow process within NSCO. The only additional comment is that the issue processing clock, which has been mentioned several times, is stopped by various

means by the Material or Traffic Departments. For instance, if the material is being sent parcel post then the clock stops when the material is shipped; while in the case of a BALD issue, the clock stops when the material is picked up. These various means of stopping the clock are addressed in the section on volume of business within the Center that highlights the various methods of delivery.

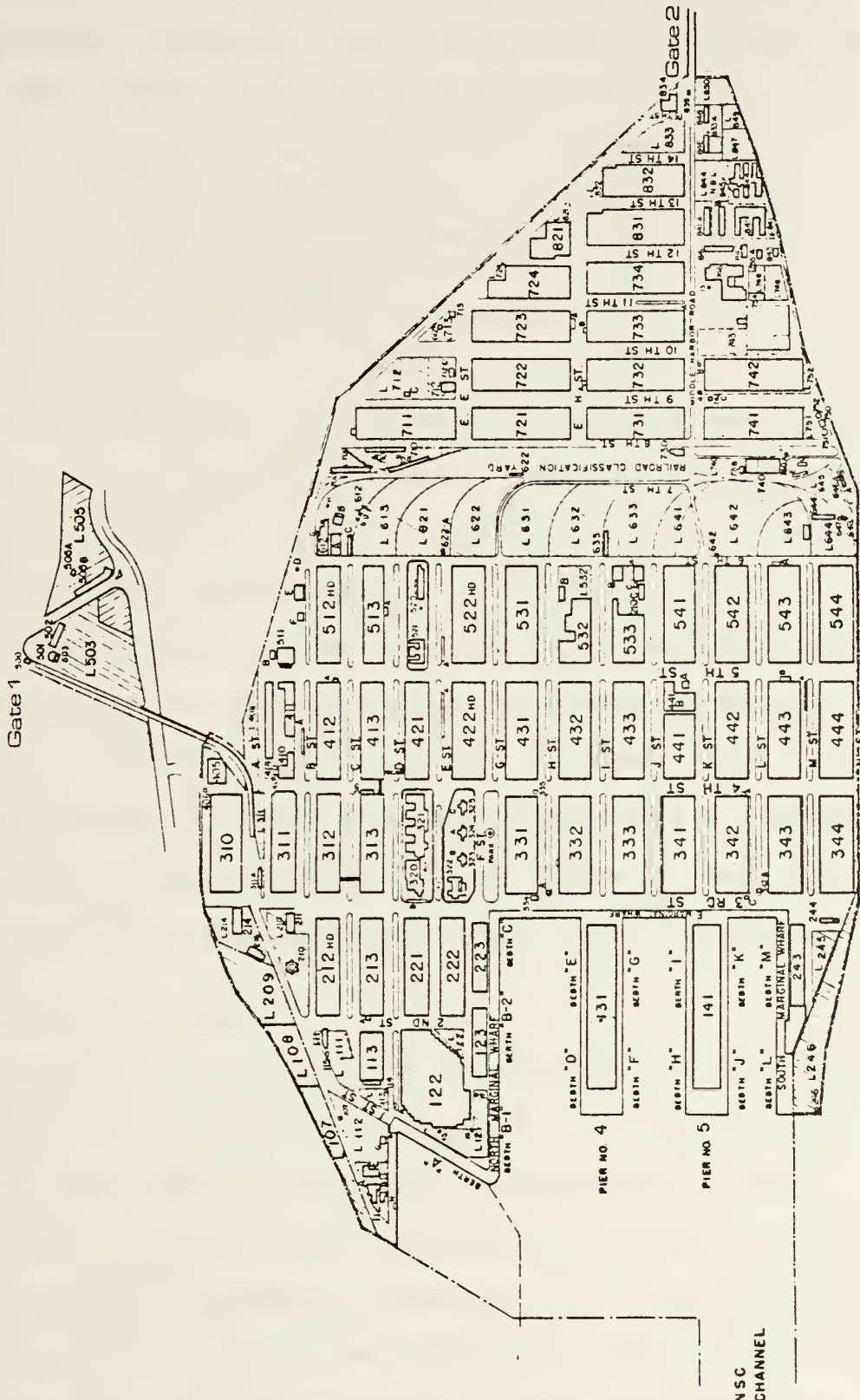
B. MATERIAL FLOW

All of the material issued by NSCO is physically located within the confines of the Center. That is to say, there is no material which is held at outlying areas and drayed to the center for issue. Currently, the movement/distribution of material falls within the responsibility of two departments, namely Material and Traffic. The Material Department, code 300, is mainly responsible for the receipt and issuance of material from the warehouses. In addition, it becomes involved in the distribution of material in three ways. It is responsible for shipment made via parcel post, material issued on a "bearer" pick-up basis and deliveries made on the Center (i.e., to ship or other department). The Traffic Department, code 500, is responsible for the distribution of material that is destined for delivery off the center. As such they are concerned with such areas as the BALD truck, stuffed vans, and breakbulk cargo. Since both of these departments are interrelated, there has been a proposal made to combine them into a Physical Distribution Department, code 400. Presently, no action has been taken in this regard.

With that as background, it can be stated that material moves throughout the center in two or three primary ways. These are by means of the Automated Material Handling System (AMHS), mechanical handling equipment (MHE), and vans/trucks that are spotted at various locations to be loaded and delivered at a later date. Figure 1, a map of NSCO, is included to provide an orientation for the reader.

The first two movement methods are under the purview of the Material Department. The AMHS operates between four warehouses. It is a mechanical operation that allows a warehouseperson to pick material for an issue from a bin, place it in a coded tote pan, put the pan on a conveyor belt and have the pan automatically routed to a staging area for packing/shipping. The packing/shipping area, at the end of the AMHS conveyor line, is located in building 312. This is also the parcel post packing area. As of June 1979, NSCO made 64% of its issues by parcel post (see part D, Volume of Business); however, parcel post is not used as a means of delivery to local customers. AMHS is used in a special way in support of the local customers, specifically NAS Alameda. In those instances where the material issued is small enough (i.e., under 40 pounds) to have been issued from a bin in one of the AMHS warehouses and is destined for NAS Alameda, it carries a special blue issue document. When it reaches the packing/shipping area it is placed in a holding area from which it is picked up by the BALD truck for direct delivery.

FIGURE 1



The second movement method, namely MHE, is used primarily for bulk items. Currently, the MHE division, code 303.1, has the following types of equipment assigned to it:

Forklift trucks	326
Warehouse tractors	45
Straddle trucks	14
Transporters, rider/walker	21
Platform trucks	15
Warehouse cranes	5
Warehouse electric tractors	2
Total	<u>428</u>

Generally speaking, the movement of items by the MHE is in preparation for further delivery. That is, the MHE either brings bulky items to a central staging area or is actually engaged in loading operations.

The last method of moving material is through the use of vans/trucks that are spotted at various locations around the center. Normally, material placed on these types of conveyances is moved off the center for delivery to a customer. It is mentioned mainly because a large volume of material (by weight) moves about and leaves the Center in this manner.

C. DISTANCES AND TIMES

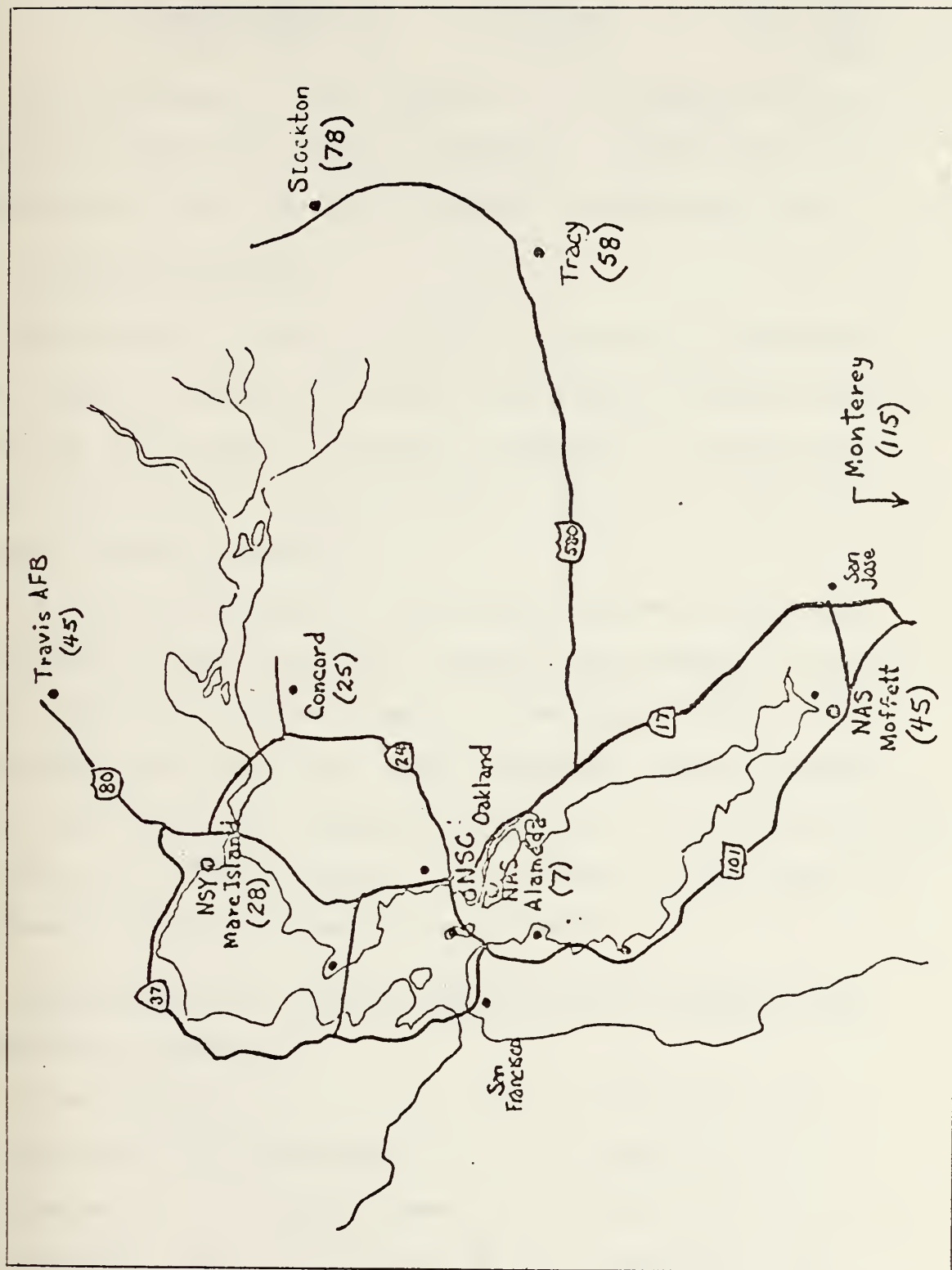
The intent of this section is to highlight the various distances and times required to support the Center's local customers under its local delivery program known as BALD. Chapter three contains a more detailed explanation of this system, including information relating to the specific customers supported, how they are clustered to make up the various routes, and what the volumes to these customers are.

Generally speaking, BALD is concerned with making deliveries to local customers within a 60-mile radius of NSCO. Figure 2 is a map showing the geographic localities serviced by the BALD operation. It should be noticed that two areas, Stockton and Monterey, appear on the map even though they are over 60 miles from the Center. This is because these areas are still serviced by BALD but on a non-routine basis, rather than on the scheduled daily runs. Consideration has been given to turning these outlying areas over to a commercial carrier, but this has not as yet been done. There are two main problems associated with quantifying the amount of time taken for delivery to particular customers. First, customers are clustered together geographically for delivery purposes. For example, Mare Island is included with Travis AFB and the Weapons Station, Concord. Therefore, the over-the-highway distance may be inappropriate in establishing the delivery time. A second factor is the volume of material destined for each customer on a route; the duration of the offloading delay would vary directly with the volume of material.

Given these two factors, there are two things that can be stated regarding the time factor. First, trucks depart NSCO each morning at approximately 0800 to service the various routes. Second, according to the transportation hold time report prepared by the Traffic Department, (see figure 3) the time of delay in getting the material to the customer (which can be attributed to the transportation area) is as follows:

FIGURE 2

GEOGRAPHIC DISTRIBUTION OF CUSTOMERS



	January-September 1979	
	<u>Actual</u>	<u>Standard</u>
Issue Group I	0.7 days	1.0 days
Issue Group II	1.8 days	3.0 days
Issue Group III	2.5 days	7.0 days

As can be seen, there appears to be a universal delay associated with the delivery operation. A more detailed description of the delivery process is contained below.

D. VOLUMES OF BUSINESS

The intent of this section is to display statistically the volume of business at NSCO, both from an overall point of view and on the basis of support rendered to the Center's local customers, thereby providing a basis for comparison between the two groups.

To obtain a picture of the overall volume of business performed by NSCO, the UA-26, "Supply Distribution and Inventory Control Operations Report" was utilized. This report summarizes such areas as: total requests received, issues made, and percentage shipped on time. All of these statistics are kept on a monthly basis. An analysis of this report for a 12-month period indicated the following:

UA-26 Analysis---October 1978 Through September 1979

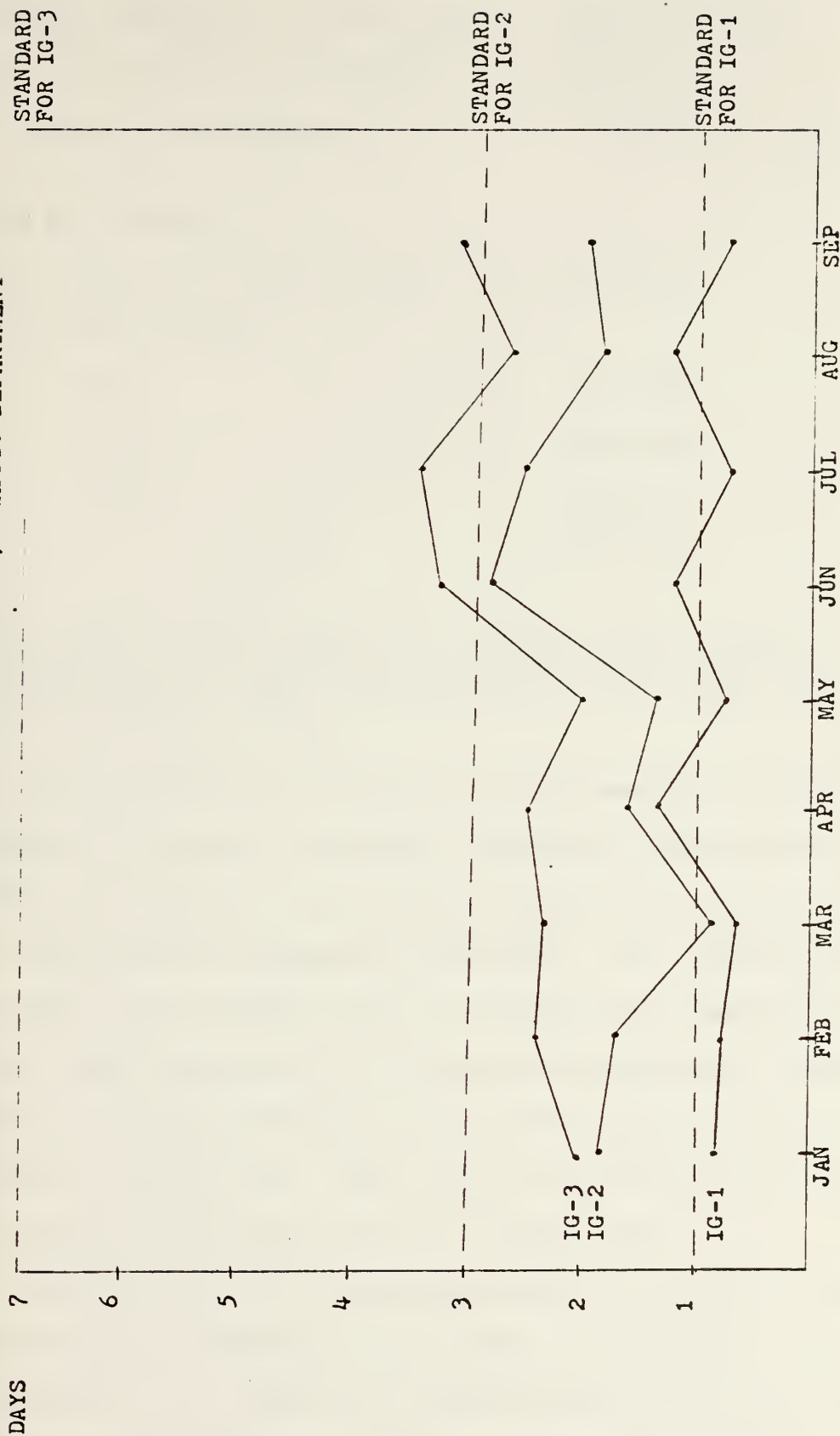
BREAKDOWN OF REQUESTS

Total Requests	2,477,822	(1)
Excluded as Non-Standard	<u>470,221</u>	(2)
Requests for Standard Items	2,007,601	(3)
Standard items not carried, NC	<u>320,295</u>	(4)
Net Requests	<u><u>1,687,306</u></u>	(5)

FIGURE 3

BALD TRANSPORTATION HOLD TIME FOR 1979

SOURCE: MONTHLY SAMPLE OF SHIPPING DOCUMENTS
HELD BY SHIPPING DIVISION, TRAFFIC DEPARTMENT



Standard Items not in Stock, NIS	265,231	(6)
Issues of Standard Stock Items	1,422,075	(7)
Net Material Availability	84.3%	$(7) \div (5) \times 100$

BREAKDOWN OF ISSUES:

Total Issues (see note below)	1,435,662
By Issue Group	
IG-I	152,962
IG-II	452,078
IG-III	830,622
	<hr/>
	1,435,662

NOTE: The total issues figure is slightly higher than the standard stock issues because the former reflects such items as local stock numbers, cash sales, and non-standard material.

The local customers reflected in the preceding statistics are numerous and widely scattered. Appendix A provides a perspective for viewing the volume of business attributable to these customers by geographic clusters. The listing, which was a product of a program run by an Operations Research student, Lcdr. Napoleon Nelson, at the Naval Postgraduate School was based on the requisitions in the NSCO demand history file with shipment status (BA). The file contained data for the 12-month period from August 1977 to August 1978.

The UA-26 report also contained several interesting statistics relating to shipment time frames. For example, the report contained the number of items shipped in each of the three issue group categories. These numbers were broken

down further to indicate the number of items shipped on time as well as the percentage of items shipped on time within each of the categories. Table 1 highlights these statistics for the same 12-month period.

After scrutinizing table 1, it is seen that the greatest volume and highest percentage of "shipped on-time" are associated with IG-3. Perhaps that can be attributed to the more lenient time standards associated with that issue group.

As mentioned at the beginning of this section, in addition to displaying the overall volume of business, the intent was to describe the volume of business to local customers. Although the UA-26 report does not provide any information in this regard, the FT-95G1 "Requisitions with Shipment Data" report, a compilation of a file that is broken down by proof-of-shipment, can be used. Of particular interest is the fact that this file contains a "9" in one of its computer fields which signifies that the issue was made and delivered locally (i.e., BALD). Other codes indicate methods of delivery such as parcel post, air, and water. An analysis of this report made in June 1979, representing the preceding 3½ month period, indicated the following statistics:

Table 1

Summary of Issues and Per Cent Shipped on Time

<u>Month</u>	<u>Issues</u>			<u>Shipped</u>			<u>Shipped on-time</u>			<u>Per cent on-time</u>		
	IG-1	IG-2	IG-3	IG-1	IG-2	IG-3	IG-1	IG-2	IG-3	IG-1	IG-2	IG-3
OCT	12,406	39,507	69,609	11,924	33,850	65,556	16,387	32,443	63,245	95	96	96
NOV	12,294	35,853	60,080	11,906	33,319	57,027	11,035	31,489	56,258	93	95	99
DEC	11,996	34,804	58,723	12,139	32,426	55,564	11,445	30,928	54,471	94	95	98
JAN	12,476	40,178	82,749	11,478	39,736	77,523	10,759	37,923	75,769	94	95	98
FEB	11,870	36,419	59,571	11,955	33,083	56,702	11,135	30,977	55,466	93	94	98
MAR	14,667	43,845	78,057	12,666	43,549	74,873	11,907	41,106	73,906	94	94	99
APR	13,379	34,940	78,560	13,576	33,411	76,662	12,701	31,671	73,685	94	95	99
MAY	13,438	39,341	75,757	13,841	38,055	61,720	13,026	36,205	60,236	94	95	98
JUN	12,427	33,295	64,706	12,026	34,770	71,598	11,091	32,610	69,201	92	94	97
JUL	12,162	34,103	80,737	11,488	31,322	71,099	10,573	29,389	67,939	92	94	96
AUG	13,923	43,500	59,257	12,967	36,660	64,659	12,010	34,325	62,502	93	94	97
SEPT	11,924	36,293	62,816	12,093	34,933	46,107	11,312	32,612	44,794	94	93	97

<u>TYPE OF DELIVERY</u>	<u>% OF ISSUES</u>
Parcel Post ^{1/}	64
Bearer Pickup/Center ^{1/} Delivery	9
Bay Area Local Delivery(BALD)	15
Vans	3
Land, (commercial carrier)	4
Water (breakbulk to MOTBA)	1
Air	4
TOTAL	<u>100%</u>

^{1/}Both of these types are handled via AMHS.

As can be seen, 15% of the issues made by the Center are handled via BALD. This figure will be used again later when the cost analysis associated with the distribution of the material is addressed. Its function at that time will be as a rough yardstick in distributing those costs which can't be directly associated with a particular method of delivery (e.g., MHE costs).

Finally, there remains the description of the methods of stopping the issue proecessing clock based upon the various means of delivery. Accordingly, the clock is stopped at the following times:

METHOD OF DELIVERYWHEN CLOCK STOPPED^{1/}

Parcel Post

Date Shipped Stops Clock

BALD (see note below)

Date Picked Stops Clock

Vans

95% goes MILSTAMP
5% otherA Structured Date Stops Clock
Date Picked Stops Clock

Land

75% goes MILSTAMP
25% otherA Structured Date Stops Clock
Date Packed Stops Clock

Water

Date Packed Stops Clock

Air

Date Packed Stops Clock

^{1/}The issue processing clock stops when the item is picked. At that time the transportation hold time clock begins. This clock represents the time from making the issue until the item is loaded for delivery to a local customer. The reader is again referred to figure 3 for a graphic display of the hold time.

III. LOCAL DELIVERY SERVICE

A. BACKGROUND

The purpose of this chapter is to examine the existing system for the delivery of material to local customers served by the Naval Supply Center. The examination is limited to delivery service provided by the Bay Area Local Distribution (BALD) system and does not consider delivery performed by NSC customers themselves. As was mentioned in Chapter II, local customers are defined as those activities, both ashore and afloat, that are located within a 60 mile radius of the Supply Center. Additionally, this chapter contains a brief discussion and evaluation of alternative methods for providing local delivery service.

The general impression that the authors acquired about the existing BALD system is that it appears to be relatively effective. Material seems to be expeditiously delivered within established timeframes and local customers appear to be receiving good service. This is not to say, however, that current BALD operations are necessarily efficient. Unfortunately, due to a time constraint, the authors were unable to assess the efficiency of current BALD operations.

B. THE BAY AREA LOCAL DELIVERY (BALD) SYSTEM

The Naval Supply Center Oakland serves 164 customers within the San Francisco-Oakland Bay area and 10 more on the Monterey Peninsula. These customers are listed in Appendix A

by geographic cluster. The afloat customers, located at Mare Island, Concord, Hunters Point, Oakland, and Alameda, are listed separately. Since the list is a product of a sort of the NSCO demand history with shipment status (BA) file for the period August 1977 to August 1978, it is quite possible that it may not reflect all local customers. Nonetheless, the list does serve to illustrate the large number of local customers that NSCO serves. Basically, BALD operations serve customers in geographic clusters two through nine and afloat units.

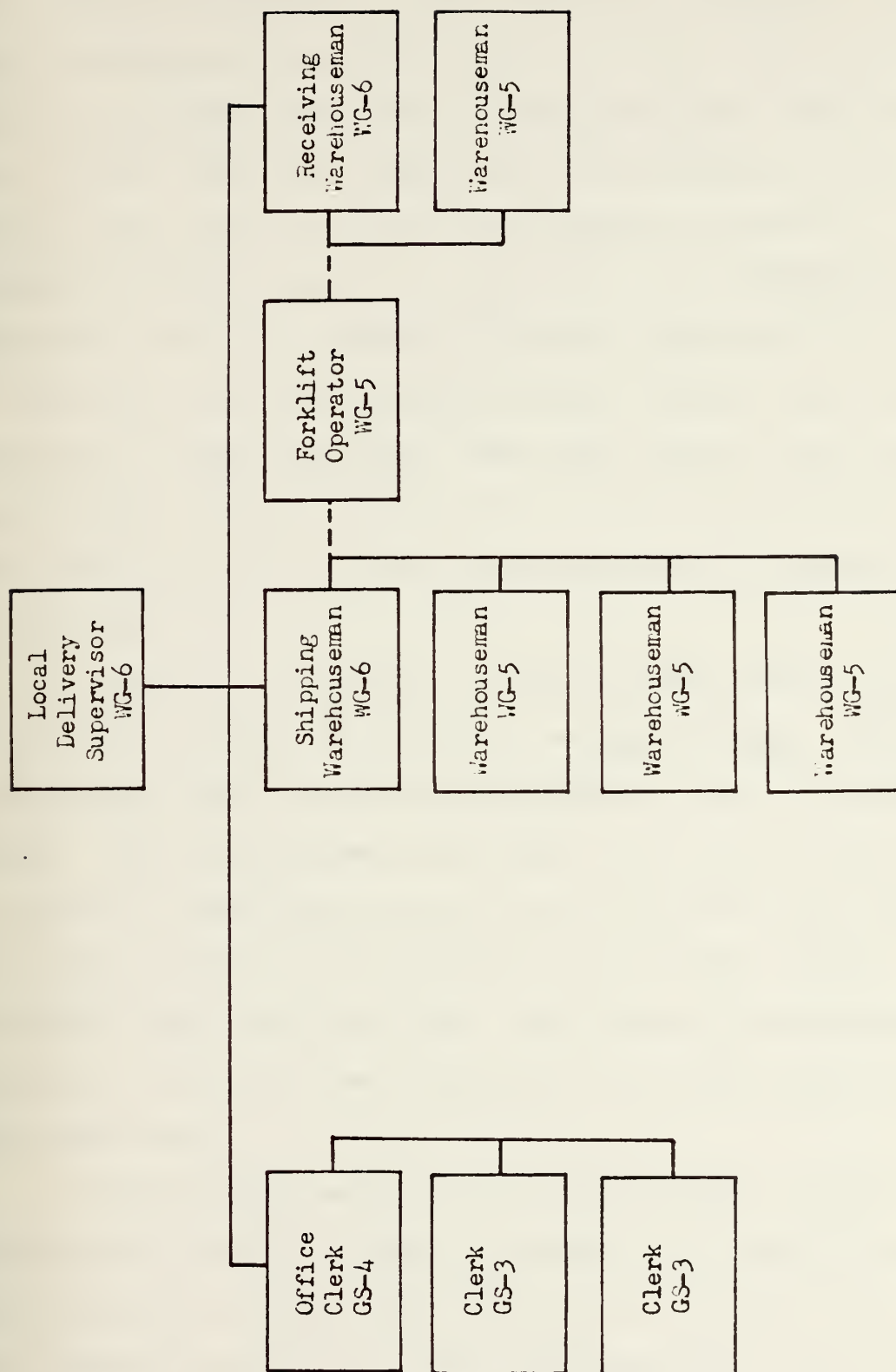
1. The BALD Organization.

The Local Delivery Section (Code 503.32) that is responsible for BALD operations organizationally falls within the Shipping Division of the Traffic Department. Currently, the Local Delivery Section is staffed by 11 civilian employees engaged in both administrative and cargo handling functions. Figure 4 depicts the organization for BALD operations.

Total expenses for regular and overtime wages for these personnel during fiscal year 1979 amounted to \$242,683.

2. Vehicles/Equipments Utilized.

The Bay Area Local Delivery system utilizes a variety of vehicles/equipments obtained from the San Francisco Public Works Center (PWCSFRAN). The vehicles/equipments the BALD operation employs range from sedans to large tractor-trailer combinations capable of hauling approximately 20 tons or 1200 cubic feet of material.



Vehicles/equipments are rented from PWCSFRAN on an hourly basis as required. Transportation Stabilized Equipment Rental Rates applicable to such rentals are promulgated annually by PWCSFRAN Instruction 7030.1 series. Table 2 lists vehicles/equipments utilized in BALD operations, the fiscal year 1979 and 1980 rates applicable to such rentals, and indicates those specific vehicles/equipments for which a PWCSFRAN driver is required. Note that since PWCSFRAN is required to attain a breakeven financial position at the end of fiscal year 1980 (30 September 1980), fiscal year 1980 rates are, in many instances, lower than fiscal year 1979 rates. Hourly labor billing rates for drivers in both fiscal years 1979 and 1980 are \$19.13 for straight time and \$24.02 for overtime.

Generally, the rental of vehicles/equipments is based on an hourly custody charge plus a mileage charge. The hourly charge starts when the vehicles/equipments leave the PWCSFRAN garage. Vehicles/equipments provided with a driver when used in excess of eight hours per day are billed for the actual hours used. Hourly rental charges for trailers, however, do not exceed eight hours per day. This permits the overnight spotting of trailers where required at no additional cost to BALD operations.

Vehicles/equipments can be requested by the BALD system Foreman or Acting Foreman. Requests for vehicles/equipments required for BALD operations are placed with the Material Handling Branch where they are channelled to the PWCSFRAN dispatcher.

Table 2

Listing of Vehicles/Equipments Utilized for Local
Delivery and Applicable PWCSFRAN Fiscal Year 1979 and 1980 Rental Rates

Source: PWCSANFRAN Instruction 7030.1D

Eqpt Cost Code	Description	FY 1979			FY 1980		
		Monthly Custody Rate \$	Hourly Rate \$	Mileage Rate \$	Monthly Custody Rate \$	Hourly Rate \$	Mileage Rate \$
104	Sedan, Compact	85.	.53	.067	77.	.48	.060
313	Truck, $\frac{1}{2}$ Ton, Pickup	83.	.52	.079	75.	.47	.071
319	Truck, 4x2, Pickup, Compact (approx $\frac{1}{2}$ Ton)	98.	.61	.079	88.	.55	.071
329	Van, Panel (approx $\frac{1}{2}$ Ton)	114.	.71	.079	102.	.64	.071
445	Truck, 2 Ton, Stake	142.	.89	.123	128.	.80	.111
449	Truck, 2 Ton, Van	142.	.89	.123	128.	.80	.111
603 *	Truck, 5 Ton, Stake	432.	2.70	.179	389.	2.43	.161
614 *	Truck, Tractor, $7\frac{1}{2}$ Ton	634.	3.96	.190	570.	3.56	.171
620 *	Truck, Tractor, 10 Ton, 4x2	768.	4.80	.367	691.	4.32	.330
630 *	Truck, Tractor, 10 Ton, 6x4	768.	4.80	.367	691.	4.32	.330
645 *	Truck, Tractor, 15 Ton (Diesel Powered)	840.	5.25	.300	757.	4.73	.270
731 *	Truck, Highlift (approx 2 Ton)	462.	2.89	.258	416.	2.60	.232
812 *	Semitrailer, 11 - 14 Ton, Stake	58.	.36	—	51.	.32	—
813 *	Semitrailer, 11 - 14 Ton, Van	58.	.36	—	51.	.32	—
816 *	Semitrailer, 20 Ton, Stake	94.	.59	—	85.	.53	—
817 *	Semitrailer, 20 Ton, Van	94.	.59	—	85.	.53	—

* Vehicles/Equipments rented only with PWCSFRAN Driver/Operator

3. Types of Local Delivery Service

The Bay Area Local Delivery system provides both scheduled and irregular deliveries to local customers. When the need arises, the BALD system also provides expedited delivery service for critical items.

Regular scheduled service is provided over four delivery routes designated Stakes #1, #2, #3, and #4. The usual routes applicable to each of the Stake delivery runs is shown in Table 3. These routes serve zones where most of the delivery of material is concentrated. Service is provided five days per week.

Prior to July 1979, only Stake #1, #2, and #3 routes were operated. On the basis of the pending NSCO/NAS consolidation, the Stake #3 route was split and the fourth regular scheduled route, Stake #4, was added to allow for more service to the NARF buildings 170 and 500 at the Alameda facility.

All local delivery material, with the exception of semi-perishable/dry subsistence items and that destined for NAS Alameda, is consolidated for delivery in building 341W. Material slated for delivery to NAS is picked up by BALD vehicles at building 312. Semi-perishable/dry items are shipped directly from building 2 at the Alameda facility.

A tractor-trailer combination is utilized on Stake #1 and #2 routes and departs NSCO at about 0800 daily. Additional trips are made during the day if sufficient material to load a trailer has accumulated.

A five-ton stake truck is utilized for deliveries on the Stake #3 route. Since July, a PWCSFRAN driver has been

Table 3

Regularly Scheduled Local Delivery Routes

Route Designation (Stake #)	Activities Served
1	Combat Technical School, Mare Island, Bldg H-71 Marine Barracks, Mare Island, Bldg M-37 Coastal Rivers, Mare Island, Bldg 762 Ships Pierside, Mare Island Traffic Division, Mare Island, Bldg 207 Supply Activity, Mare Island, Bldg 289 Electric Command, Mare Island, Bldg 527 Navy Exchange, Mare Island, Bldg 523 Mare Island Receiving, Bldg 483 Submarine Group, Mare Island Bldg 1320 Naval Security Group, Skaggs Island Naval Weapons Station, Concord, Bldg 1A-10 Naval Weapons Station, Concord, Bldg 1A-5
2	Coast Guard Office, Yerba Buena Island, Bldg 2 Naval Support Activity, Treasure Island, Bldg 260 Coast Guard Office, San Francisco Ships at Commercial Piers, San Francisco Ships at Bethlehem Steel Shipyard Presidio Receiving Office, Bldg 661 Ships at AAA Shipyard, Hunters Point Supervisor, Shipbuilding, Hunters Point, Bldg 813 San Francisco International Airport Western Division Facility, San Bruno, Bldg A207 NAS, Moffett Field, Bldg 144
3	Navy Recruiting Office, Oakland Alameda Facility Warehouse #2 NAS, Alameda, Bldg 368 NAS, Alameda, Bldg 370 Navy Exchange, NAS Alameda, Bldg 118 NAS Alameda, Galley, Bldg 3 FMAG, NAS, Alameda, Bldg 162 Ships Pierside at NAS Alameda Ships at Todd Shipyard Marine Recruiting Station, Alameda Marine Training Center, Alameda Coast Guard, Government Island Driesbach Cold Storage, Oakland Oakland Airport Oak Knoll Medical Center, Bldg 505
4	NAS, Alameda, Bldg 500 NAS, Alameda, Bldg 170 NAS, Alameda, Bldg 368

assigned permanently to drive the route. Delivery runs are scheduled to depart at 1000 and 1400 daily. Additional trips are performed as necessary during the day. A tractor-trailer combination is used as required on the route to accommodate delivery of bulky materials or loads in excess of the capacity of the assigned five-ton vehicle.

Finally, Stake #4 route utilizes a two-ton stake truck to make runs to the NARF, Alameda. These runs depart at 1000 and 1400 daily. Here again, a permanent PWCSFRAN driver has been assigned.

4. Volume of Material Delivered by BALD.

Based on data extracted from the Uniform Management Reports for the Shipping Division, the Local Delivery Section delivered a total of 85,181 measurement tons (MT) of material during fiscal year 1979. Monthly deliveries are shown below:

<u>Month</u>	<u>Measurement Tons</u>
Oct	9,292
Nov	7,922
Dec	6,117
Jan	6,681
Feb	6,404
Mar	7,188
Apr	6,603
May	6,744
June	6,283
July	7,002
Aug	8,481
Sept	<u>6,464</u>
TOTAL	<u><u>85,181</u></u>

These deliveries include semi-perishable/dry subsistence items. The number of measurement tons of semi-perishable/dry subsistence delivered could not be determined because of the unavailability of records.

Data on the total measurement tons of materials back-hauled for local customers to the NSC was also not available. However, it was estimated by one source that about 60 percent of the total local mileage is unloaded (deadhead) mileage.

5. BALD System Costs

The cost of vehicles/equipments used to deliver material locally by the BALD system is charged against Second Destination Transportation funds controlled by the Navy Material Transportation Office (NAVMTO), Norfolk, Virginia. These charges are recorded against Job Order Number 1687011 for rental of vehicles/equipments and Job Order Number 1687012 for rental of vehicles/equipments used in expedited local delivery. /4/. Total charges amassed during fiscal year 1979 against Job Order Numbers 1687011 and 1687012 were \$445,774 and \$50,178 respectively, for a total of \$547,608.

C. ALTERNATIVE METHODS OF LOCAL DELIVERY

As previously discussed, the BALD operation appears to provide local customers with good delivery service. The question which arises, however, is whether or not the cost of local delivery operations could be reduced without degrading the current service levels. One means of reducing the cost of local delivery is to increase efficiency through improvements to the current local delivery system. Another possible means for reducing cost, on which the following discussion focuses, involves shifting to contract or commercial carriage for the delivery of material locally. This section describes these

alternative delivery methods, provides a cost comparison, and discusses some of the advantages and disadvantages of each method.

Before proceeding to examine the alternatives to the use of PWCSFRAN vehicles/equipments and drivers, there are several factors concerning contract and commercial carriage which bear mentioning. First, contract and commercial carriers operating in California are subject to economic regulation by the Public Utilities Commission (PUC). Under these regulations, the PUC issues operating certificates to commercial carriers and operating permits to contract carriers. Second, these regulations establish minimum rates applicable to all intra-state contract and commercial carriage. However, provisions of section 530 of the State of California Public Utilities Code allow carriers to grant the Government reduced rates for the transportation of property. Commercial carriers can independently or collectively make quotations applicable to Government traffic and file them with the PUC. Additionally, these quotations, referred to as tenders, must be approved by Headquarters, Military Traffic Management Command (MTMC). There are a large number of tenders on file with MTMC which specify a broad range of rates, charges, and services. Similarly, contract carriers can file with the PUC for a deviation from minimum rates for Government traffic.

1. Contract Carriage

Contract carriage can take two forms: (1) a dedicated service type, and (2) a specialized service type. The first

type, dedicated service, is provided by a contract carrier that services a shipper with a fleet of vehicles used exclusively by the shipper. Under a dedicated service contract, a carrier could provide the Government with vehicles and drivers on an hourly, daily, monthly, or yearly basis. As previously mentioned, a carrier can offer to perform delivery service for the Government at less than the minimum rate.

The second type, specialized service, is provided by a carrier to meet a distinctive need of a shipper. The specialized service aspect distinguishes this type of contract carriage from commercial carriage described later. Specialized service could include such things as regularly scheduled pick up service, delivery over specific routes, or delivery within prescribed time frames. Again, carriers are free to perform these services for the Government at below minimum rates.

Because of time limitations, the authors were unable to obtain quotations for either type of contract service. However, so that a cost comparison could be performed, minimum hourly vehicle and driver rates applicable to a dedicated type service are used. In the opinion of the authors, the use of rates published in the California Minimum Rate Tariff (MRT) 15 is valid for the purposes of a cost comparison, because fuel costs and other economic factors make it unlikely that carriers would be willing to provide a dedicated service at anything less than minimum rates at this time. Because quotations from carriers providing specialized service were not obtained, this type of contract service is not included in the cost comparison.

2. Commercial Carriage

Motor carriers engaged in commercial carriage provide shippers with one-way pick up and delivery services. Unlike the specialized contract carriage arrangement described above, commercial carriers make themselves available to all the public and do not provide a distinct transportation service for any particular shipper.

The quotation of rates and pricing of shipments by commercial carriers is a rather complex process. Basically, the rates that carriers charge are based on the commodity being shipped, the distance from origin to destination, and the weight tendered for the shipment. Activities that ship mixed commodity shipments to a single destination commonly use all commodity rates, also known as freight-all-kinds (FAK) rates, in which the carrier specifies the rate per shipment in dollars per hundred weight (CWT). This FAK rate was used as the basis for the cost comparison that follows.

As previously mentioned, commercial carriers file tenders specifying Government rates with the PUC and receive approval from MTMC. These tenders specify a broad range of rates, charges, and services applicable to Government shipments. For the purposes of the cost comparison, the authors selected rates from tenders on file at MTMC Western Area, Oakland which reflected extremes, i.e., the lowest and highest. Additionally, the cost of smaller shipments was computed using a tender issued by Alco Transportation. This carrier provides services for the California Less-Than-Truckload (LTL) program

used by the Navy for shipments of less than 10,000 pounds shipped between specific points. While it is recognized that most BALD shipments exceed 10,000 pounds, there are occasions when less than 10,000 pounds is shipped.

3. A Cost Comparison of Delivery Methods

The basis for the cost comparison is a point-to-point shipment from NSCO to Mare Island. The comparison does not include multiple deliveries at the destination.

In computing the cost of a shipment by either the current BALD operation or a dedicated contract carrier, it is assumed that the round trip between NSCO and Mare Island takes four hours and the total round trip distance is 80 miles. . The cost of the current BALD operation for a shipment based on fiscal year 1980 PWCSFRAN rates found in Table 2 is computed as follows

Cost of driver (4 hours at \$19.13)	\$ 76.52
Rental of Truck, 3 axle, diesel, (4 hours at \$4.73)	18.92
Mileage Charge for Truck (80 miles at \$.27)	21.60
Rental of Trailer, 20 Ton Van (4 hours at \$.53)	<u>2.12</u>
TOTAL	\$119.16

The cost of a shipment using a dedicated contract carrier based on MRT 15 is:

Cost of vehicle and driver, 3 axle Truck and 28 foot plus Van (4 hours at \$26.15 + 8% surcharge)	\$112.96
Mileage Charge (80 miles at \$.385 + \$.08 surcharge)	<u>37.20</u>
TOTAL	\$150.16

The cost of a shipment by a commercial carrier, reflected in Table 4, is calculated by multiplying the rate per hundred weight specified in the applicable tender by the number of hundred weights being shipped. To this total is added \$50 administrative cost for the processing of the Government Bill of Lading (GBL) required for commercial shipments. This new total, in turn, is divided by the weight being transported to arrive at an adjusted cost per hundred weight which includes GBL costs.

From examination of Table 4, which is a summary of the total and per hundred weight of costs for each of the delivery methods, it appears that in all cases the existing local delivery operation--BALD system-- is the least costly method despite the fact that a significant portion of a trip is travelled unloaded. The difference in total cost for a 5,000 pound shipment is even larger if a five-ton stake truck from PWCSFRAN is used to perform the delivery instead of the tractor-trailer combination used in the comparison. In this case, the total delivery cost is \$99.12.

Another major factor, aside from cost, which is important to consider in evaluating the alternative methods of delivery is service. In the context of NSC's mission, service is primarily defined in terms of delivery times. Because of the nature of operations, it is doubtful that commercial carriers could meet current delivery time frames. Thus, responsiveness is one of the major advantages that the current local delivery operation and dedicated contract carriage have over

Table 4.

Summary of Total Cost/Cost per Hundred Weight for
the Alternative Local Delivery Methods

Weight (Pounds)	M E T H O D O F D E L I V E R Y				
	Current Operation	Contract M&T 15	California LTL	Commercial Low Tender	High Tender
5,000	$\frac{119.16}{2.38}$	$\frac{150.16}{3.00}$	$\frac{154.50}{3.09}$	$\frac{120.00}{2.60}$	$\frac{192.00}{5.64}$
10,000	$\frac{119.16}{1.19}$	$\frac{150.16}{1.50}$	$\frac{195.00}{1.95}$	$\frac{150.00}{1.50}$	$\frac{252.00}{2.52}$
20,000	$\frac{119.16}{.60}$	$\frac{150.16}{.75}$	--	$\frac{176.00}{.88}$	$\frac{318.00}{1.59}$
30,000	$\frac{119.16}{.40}$	$\frac{150.16}{.50}$	--	$\frac{176.00}{.59}$	--

1/ This was calculated as follows: $\frac{(50 \text{ CWT} \times \$1.60) + \$50}{50 \text{ CWT}} = \frac{130}{50} = \2.60

commercial carriage. Some other advantages are:

1. operations can be scheduled to better coincide with the receiving activities delivery time preference;
2. flexibility to accommodate emergency requirements;
3. minimal documentation required;
4. unnecessary to cope with complicated rate structure and frequent changes thereto associated with commercial carriage;
5. backhauls of material to NSC do not generate additional transportation cost as they would with commercial carriage but rather serve to reduce the transportation cost per unit of all material shipped;

In terms of service, a disadvantage associated with both contract and commercial carriage is that in instances where the rates offered by several carriers are identical, the Government is obligated to distribute business equitably among all so long as they meet set standards. A constant change in carrier would tend to reduce effectiveness and hence service.

The cost comparison presented above, while ignoring total costs of local delivery for the system, nevertheless seems to suggest that the existing method of delivery, the BALD system, is the lowest cost method. This supports the theoretical view that if the same degree of efficiency is attained, the fact that for-hire carriers operate for a profit and PWCSFRAN does not, should mean that utilization of PWCSFRAN vehicles/equipments will result in lower costs.

Essentially, the existing BALD operation is a lease operation where NSCO rents vehicles/equipments from PWCSFRAN. Moreover, the NSCO's method of operating the BALD system

seems to be in consonance with the finding of many commercial firms that leased operations are less costly than using contract or commercial carriage and provide customers with better service. Additionally, with the trend for contract and commercial rates to rise, use of PWCSFRAN vehicles/equipments provides for more stability in costs and allows for better control of transportation costs.

Finally, it is the opinion of the authors that improvements in the efficiency of the existing BALD operation can be effected. To achieve more efficiency and to permit better cost control, improvements to the information system and implementation of some form of cost standards are required.

IV. COSTS OF DISTRIBUTION

The intent of this chapter is to further quantify the costs of distribution of material to local customers by examining those costs related to areas other than transportation. For the purposes of this cost analysis, a "womb to tomb" approach has been employed. That is to say, the distribution process begins with the actual receipt of the requisition at NSCO. Therefore, it is appropriate to consider the costs associated with the customer services department as impacting upon the overall cost of distribution since that department is responsible for entering the requisition into the issue processing cycle. Similarly, after an issue has been made, there are costs associated with physically handling the material in preparation for delivery. And, of course, at the opposite end of the distribution cycle are those costs associated with moving the material from NSCO to the customers. Therefore, the overall distribution cost will be a summation of those individual costs associated with such areas as the following:

- a. Equipment rental from PWC
- b. Drivers to operate the PWC equipment
- c. The maintenance of AMHS
- d. The MHE equipment
- e. Picking/Packing/Loading material
- f. Supervision/Management of the operation

These various costs are collected at the Center under either unique job orders (J.O.'s) or standard cost account codes (CAC's). The former category is established locally between the Center and another activity, say PWC. The latter contain account codes that have been formulated by the Comptroller of the Navy and published in Chapter 5, Part B, NAVSUP Management Handbook (NAVSUP Publication 285). Each account code contains a description of the work involved as well as the work unit used to measure productivity.

The central point of collection and preparation of cost data is the Comptroller Department, Code 50. Each month that department prepares a Uniform Management Report (UMR). The report is prepared for the Center as a whole as well as for the individual departments (i.e., Traffic, Material). A sample is contained as Appendix B. As can be seen the UMR is broken down according to the various cost account codes by division within each department of NSCO.

The J.O.'s and CAC's have been reviewed and utilized in determining the cost of distribution. However, one problem associated with using these two categories is that the data cannot be stratified below the divisional level within a given department. That is to say, whenever there is a division within a department that performs a task that can be associated both with the distribution of material to local customers and with another function, it is impossible to allocate the costs for that task to either function except in an arbitrary manner. For example, there is only one packing division within the

Material Department and that division is responsible for all material leaving that department. The division packs both for parcel post shipment and for local delivery via truck. However, as previously mentioned, parcel post is not used in conjunction with local customers. Therefore, to the extent that the Material Department's packing division packs parcel post items, as opposed to local delivery material, there is a contamination of cost data associated with that function. This particular problem has been resolved by attempting to purify the cost associated with delivery to local customers to the greatest extent possible prior to its inclusion in the study.

At the first level, are those "direct" costs that can be uniquely associated with delivery of material to local customers. At the second level are those "indirect" costs that contribute to the overall cost of distribution, but cannot be totally assigned to it. These costs may indeed affect the cost of distribution, but may also deal with other Center operations as well (e.g., MHE). At the third level are those "other" costs which are associated with Center operation but which also relate to the distribution of material. An example of such a cost would be the operation of the ADP Department which is responsible for generating the issue documents. However, in this instance, the generation of issue documents is only a small portion of the work performed. Therefore, these "other" costs are only presented in the aggregate with

no attempt made to assign a specific portion of them to the material distribution area.

So as to better understand the problem encountered with assigning either all or a part of the costs associated with each cost account to the distribution of material, a description of each account is contained as Appendix C. A review of these descriptions shows that some are very specific while others are quite vague. The intent is to utilize these cost accounts along with the unique job orders and arrive at an overall cost of distribution.

A. DIRECTLY ASSOCIATED COSTS

The first cost most closely associated with the cost of distribution is the one that covers the vehicular equipment and operators utilized in the BALD operation. These are covered by two job orders established with the Public Works Center. The first, J.O. 1687011, is the one which is normally billed for charges associated with BALD on a routine basis. The second, J.O. 1687012, is charged whenever there is an expedited delivery at other than normal, daily times. For fiscal year 1979, the total charges lodged against these two job orders were:

J.O.	DESCRIPTION	HOURS	LABOR	MATL/OTHER	TOTAL
1687011	Local Delivery	17,048	\$329,071	\$160,342	\$489,412
1687012	Expedited Delivery	1,919	41,267	16,926	58,194
		<hr/> 18,967	<hr/> \$370,338	<hr/> \$177,268	<hr/> \$547,606

In establishing the amounts billed, the PWC uses a standard billing rate for both personnel and each piece of equipment. These rates are established on an annual basis and are contained in PWC San Francisco Instruction 7030.1D. Table 2, previously presented, indicated the types of equipment that are predominantly used by NSCO.

A second cost that can be directly traced to the BALD function is that associated with the NSCO personnel responsible for its operation. Currently, the operation is centered in the Traffic Department's Shipping Division, bldg 341, which is assigned cost account code 2125 entitled "Local Delivery" (see Appendix C for a description of the CAC). The work unit associated with this cost account is the measurement ton (1 M/T = 40 cu.ft.). The input of data into the UMR relating to the amount of work accomplished is provided by the supervisor of the division. A summary of the UMR, dated 30 September 1979, for the preceding 12-month period is included as table 5. As can be seen, the total annual labor cost incurred was \$242,684.78 in moving 85,181 M/T. This amounted to \$2.849 per M/T.

There is a third cost that most likely should be mentioned as being a direct cost of distribution. As previously noted (see material/document flow analysis), the Material Department accounted for 9% of the issues on the basis of bearer pick-up and intra-center delivery to ships located at the center's piers. It is felt that if it were not for these two methods of distribution, the material would more than likely flow to the BALD operation in bldg 341. Therefore, the costs incurred

Table 5
2125 Local Delivery
Shipping Division - Traffic Department

<u>MONTH</u>	<u>WORK UNITS</u>	<u>CIVILIAN COST</u>
OCT	9,292	\$16,766.97
NOV	7,922	19,018.40
DEC	6,117	20,811.11
1st QUARTER	23,331	\$56,596.48
JAN	6,681	\$21,524.72
FEB	6,404	20,579.73
MAR	7,188	21,179.86
2nd QUARTER	20,273	\$63,284.31
HALF	<u>43,604</u>	<u>\$119,880.79</u>
APR	6,603	16,817.00
MAY	6,744	21,518.76
JUN	6,283	21,561.06
3rd QUARTER	19,630	\$59,896.82
JUL	7,002	\$19,979.46
AUG	8,481	24,288.84
SEP	6,464	18,638.87
4th QUARTER	21,947	\$62,907.17
HALF	<u>41,577</u>	<u>\$122,803.99</u>
YEAR TO DATE	<u>85,181</u>	<u>\$242,684.78</u>

by the Material Department in making these deliveries can, in a sense, be considered direct. To substantiate this statement, CAC 2125, entitled "Local Delivery," states in part: "this account includes services to effect the movement of material to other organizations on or contiguous to the host military base. A summary of that account for the Material Department's storage division that is responsible for making these issues and deliveries is included as table 6.

Again, as can be seen, the total annual labor cost incurred was \$26,473.93 in moving 28,572 M/T. This amounted to \$0.926 per M/T. It is believed that the substantial reduction in cost per measurement ton is attributable to the fact that there is much less handling of the material in delivering it to the customer as a result of the AMHS operation.

There is one other cost that can be considered direct, relating to the maintenance performed on the AMHS equipment. Currently, this is handled under job order 1064047, which has been established between the Center and PWC. During FY 79, the total charges lodged against this job order amounted to \$384,444. This was broken down as follows:

LABOR	\$349,931
MATERIAL	34,513
TOTAL	<u>\$384,444</u>

The Center is projecting a total of \$318,800 for FY 80 based upon a reduced number of maintenance personnel for the same level of service.

Table 6
2125 Local Delivery
Storage Division - Material Department

<u>MONTH</u>	<u>WORK UNITS</u>	<u>CIVILIAN COST</u>
OCT	3,718	\$2,697.68
NOV	3,097	3,554.56
DEC	1,829	1,931.67
1st QUARTER	8,644	\$8,183.91
JAN	2,002	1,896.20
FEB	1,948	1,624.28
MAR	2,449	3,121.98
2nd QUARTER	6,399	\$6,642.46
HALF	<u>15,043</u>	<u>\$14,826.37</u>
APR	2,464	\$2,767.78
MAY	1,913	2,263.52
JUN	1,959	936.85
3rd QUARTER	6,336	\$5,968.15
JUL	2,161	\$1,435.01
AUG	2,836	2,377.66
SEP	2,196	1,866.74
4th QUARTER	7,193	\$5,679.41
HALF	<u>13,529</u>	<u>\$11,647.56</u>
YEAR TO DATE	<u>28,572</u>	<u>\$26,473.93</u>

While it is appropriate to consider these charges as directly traceable to the distribution of material, it would be inappropriate to allocate 100% of them to local delivery. As was noted in Chapter Two, the AMHS warehouse makes 64% of the Center's issues by parcel post and 9% by means of bearer pick-up or intra-center delivery. Therefore, in terms of the entire AMHS operation, bearer pickup and intra-center delivery represents 12.3% of the business while parcel post represents 87.7%. However, as stated previously, the Center does not utilize parcel post as a means of delivery to local customers. A 12.3% allocation of the maintenance charges to local delivery seems appropriate. Accordingly, this means that charges that are directly traceable from this job order amount to \$47,286 for FY 79.

Table 7 is provided as a summary of the costs that can be directly traced to local delivery. All of these costs are for the 12-month period ending 30 September 1979. Likewise, the work units contained in tables 5 and 6 that are associated with these costs cover the same period of time. Therefore, it is possible to determine a per unit cost of delivery as follows:

$$\text{\$ } 864,051 \div 113,753 \text{ M/T} = \text{\$ } 7.596 \text{ per M/T}$$

Thus, in terms of "direct" costs, it cost the Center \$7.596 per M/T to deliver to local customers during FY 79.

B. INDIRECT COSTS

Having addressed those costs that could be traced logically to NSCO's local delivery operations, the less clearly assign-

Table 7
Summary of Costs

Vehicle Costs:

Routine delivery	\$489,412
Expedited delivery	58,194

Personnel Costs:

Shipping Division	\$242,685
Storage Division	26,474

Maintenance

AMHS	\$ 47,286
------	-----------

TOTAL COST	<hr/> \$864,051
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able costs are next considered. These costs are spread over several applications and, as such, are not exclusively associated with local delivery; they can be thought of as "indirect" or "common" costs, i.e., costs that can be identified partially, but not entirely, with a costing unit. Determining the amounts of these costs that are properly identifiable to local delivery is possible, but only on a subjective basis. (For the purposes of this thesis, costs that can not at all be distinguished or separated uniquely are referred to as "other" costs and will be addressed in the following section.)

The primary data source used for developing both "indirect" and "other" costs was again the cost account code (CAC) information contained in NSCO's FY 79 UMR. Since data for indirect and other costs for the last three months of FY 79 was not yet available, the observations for the first nine months were extrapolated on a straight line basis to complete the fiscal year. With the cost observations for the entire FY 78 and the first nine months of FY 79 appearing "flat," i.e., exhibiting no seasonality, the use of straight line extrapolation for three months is reasonable. The CAC's considered for indirect cost analysis were:

CAC	Description
2114	Bin Replenishment Operations
2121	Packing Operations
2122	Bulk Issue Operations
2123	Bin Issue Operations

Bin Replenishment (2114) - When considering costs associated with local delivery, one encounters the problem of

deciding where to divorce the requisitioning, ordering, receiving, and storage costs from those of delivery. Certainly, when material is delivered to customers, it needs to be replenished at a cost to the center. Thus, a portion of the Center's replenishment costs were chosen for assignment to local delivery. A certain amount of other "preceding" costs such as general storage, rewarehousing, receiving, procurement, and requisitioning also result from supporting local customers. Such preceding costs can be tracked back ad infinitum, but become quite far removed from the local delivery process. Thus, only bin replenishment costs are considered.

CAC 2114 accumulates all physical handling costs incident to the movement of material from bulk to bin locations for replenishing stock levels. Included are costs for physical handling (labor), document processing, MHE operation, and direct (first level) supervision. The work unit is "line items stowed." For FY 79, the costs, all charged to the storage division (M-1) of NSCO's Material Department, were accumulated as follows:

<u>Month</u>	<u>Work Unit</u>	<u>Cost</u> (dollars)
Oct 78	2111	4035
Nov	1988	3897
Dec	1589	4019
Jan 79	2036	5393
Feb	1882	4207
Mar	1781	4279
Apr	1611	3286
May	1743	3166
Jun	1280	3300
Jul*	1780	3954
Aug*	1780	3954
Sep*	<u>1780</u>	<u>3954</u>
*projected figures		
TOTAL (rounded) 21,400 X 12.3% = \$47,500 X 12.3% =		
PORTION ASSIGNABLE TO LOCAL DELIVERY = <u>2600</u>		<u>\$5800</u>

The same rationale cited in the AMHS maintenance section (for direct costs) applies here - that is, 12.3% of bin replenishment costs are assignable to local delivery as the portion being "delivered" from the Material Department via "bearer pickup" and "intracenter" means.

Packing (2121) - This cost account accumulates the costs of packing or repacking all material for storage and for domestic or overseas shipment. Included are costs for physical handling, marking, packing, documentation, and direct (first level) supervision. The work unit is "packed cube" (cubic feet of packed material). For FY 79 the following packing costs were accumulated in NSCO's Material (excluding subsistence division) and Traffic Departments:

Month	<u>Traffic</u>		<u>Material</u>	
	Work Unit	Cost	Work Unit	Cost
Oct 78	235,237	198,787	25,507	63,451
Nov	229,567	203,558	33,261	68,215
Dec	231,741	182,695	31,939	54,318
Jan 79	224,464	201,267	35,691	66,355
Feb	214,484	181,989	30,100	59,944
Mar	228,675	148,277	77,437	107,987
Apr	161,291	198,799	87,517	101,811
May	177,706	181,219	94,052	104,740
Jun	158,004	129,336	97,870	104,037
Jul*	206,796	180,658	57,041	81,206
Aug*	206,796	180,658	57,041	81,206
Sep*	206,796	180,658	57,041	81,206
*projected figures				
TOTAL (rounded)	2,481,000	\$2,168,000	684,500	\$974,000
PORTION ASSIGNABLE TO LOCAL DELIVERY:	<u>X 15%</u>	<u>X 15%</u>	<u>X 12.3%</u>	<u>X 12.3%</u>
	<u>372,150</u>	<u>\$325,200</u>	<u>8,400</u>	<u>\$119,800</u>

To compute the portion of the Traffic Department's packing costs assignable to local delivery, total departmental costs were multiplied by 15%, since, as stated previously,

the BALD portion of their business was 15%. Similarly, the Material Department's total packing costs were multiplied by their respective "local delivery" portion of 12.3%. Total FY 79 packing costs properly assignable to local delivery are thus approximately \$445,000.

Bulk Issue (2122) - This cost account accumulates all physical handling costs (including MHE operation) incident to the breaking out of material for issue from bulk stores. Functions covered in this CAC include loading for movement to shipping, packing, and SERVMARTS, and direct (first level) supervision. The work unit recorded is "measurement tons (M/T) issued." For FY 79, the costs allocated to the storage division (M-1) of the Material Department were accumulate as follows:

<u>Month</u>	<u>Work Unit</u>	<u>Cost</u>
Oct 78	26,938	83,260
Nov	21,103	81,242
Dec	17,115	79,901
Jan 79	19,210	89,837
Feb	19,729	82,569
Mar	22,363	101,066
Apr	20,151	88,449
May	16,910	95,271
Jun	17,965	87,417
Jul*	20,165	87,678
Aug*	20,165	87,678
Sep*	<u>20,165</u>	<u>87,678</u>
*projected figures		
TOTAL (rounded)	242,000	1,052,000
LOCAL DELIVERY PORTION:	X 15%	X15%
	<u>36,300</u>	<u>\$157,800</u>

The use of a 15% factor to compute the portion attributable to local delivery was again based on simple BALD statistics; the use of a 12.3% factor here was considered inappropriate since it was assumed that the majority of bulk

issues did not fall into the category of "bearer pickup/ intracenter" delivery, i.e., it was unlikely that a store-keeper would drive a vehicle to NSCO seeking other than bin-nable material.

Bin Issue (2123) - The bin issue cost account accumulates all physical handling costs incident to the drawing of material from bin stock for shipment and delivery. Functions included in this CAC are costs of drawing material from bins, placing material in tote pans or other conveyance, documentation, and direct (first level) supervision. The work unit recorded is "line items issued." For FY 79, the costs associated with bin issue operations at NSCO were essentially all charged to the storage division (M-1) of the Material Department as follows:

<u>Month</u>	<u>Work Unit</u>	<u>Cost</u>
Oct 78	85,970	41,179
Nov	79,103	44,716
Dec	81,683	46,016
Jan 79	97,860	55,648
Feb	83,054	47,531
Mar	106,227	68,586
Apr	103,348	65,222
May	91,691	55,523
Jun	84,604	55,914
Jul*	90,388	53,370
Aug*	90,388	53,370
Sep*	90,388	53,370
*projected figures		
TOTAL (rounded)	1,084,700	640,400
LOCAL DELIVERY PORTION:	X 12.3%	X 12.3%
	<u>133,400</u>	<u>\$78,800</u>

The 12.3% factor was considered appropriate as representing the Material Department's contribution to "local delivery."

C. OTHER COSTS

As stated previously, "other" costs are those that can not at all be distinguished or separated uniquely; they are so commingled in different end applications that to make any quantifiable statements about them, other than as aggregations, is meaningless. "Other" costs could be fixed, i.e., not affected by the volume of deliveries, or variable, i.e., more deliveries generate greater costs. Five categories of costs, believed to be proportionately affected (variable) by the volume of delivery of material to local customers, will be considered:

<u>CAC</u>	<u>Description</u>
2191	General Storage and Warehousing Support
2192	Labor and Equipment Overhead
2193	Movement of Material Operations
2211	Customer Service
unassigned	MHE Maintenance

General Storage and Warehousing (2191) - This cost account includes the overall supervision (second level and above), clerical and support service (staff work) performed by personnel that are not readily identifiable to specific storage and warehousing operations. Naturally, there is no specific work unit measured. The relatively minor costs accumulated in this account, and the associated man-hours expended, for FY 79 are reflected below (Material Department, storage division, M-1):

Month	<u>Man-hours Expended</u>	<u>Cost</u>
Oct 78	291	3144
Nov	390	4307
Dec	310	3532
Jan 79	393	4488
Feb	300	3514
Mar	476	5956
Apr	226	2689
May	547	7285
Jun	324	3717
Jul*	362	4293
Aug*	362	4293
Sep*	<u>362</u>	<u>4293</u>
*projected figures		
TOTAL (rounded)	<u>4340</u>	<u>\$51,500</u>

Labor and Equipment Overhead (2192) - As another general overhead account, CAC 2192 accumulates the costs of supervisory and clerical operations performed by personnel in furnishing laborers, lift truck operators, and other up-graded personnel required for activity supply functions. Functions performed under this "catch all" category include determining and distributing transportation and MHE assets, maintaining a residual labor pool (standby time), warehouse elevator operation, and miscellaneous services not otherwise classified. No specific work unit is measured within this CAC. The costs accumulated in this account and the man-hours expended at NSCO during FY 79 follow:

Month	<u>Man-hours expended</u>	<u>Material Cost</u>	<u>Labor and Other Cost</u>	<u>Total Cost</u>
Oct 78	1858	63,639	24,791	88,430
Nov	2040	121,063	27,259	148,322
Dec	1361	(57,960)	84,634	26,674
Jan 79	2045	(9,062)	42,428	33,366
Feb	1889	14,389	25,864	40,253
Mar	2186	(4,560)	140,419	135,859
Apr	1936	52,445	115,105	167,550
May	1794	22,792	55,695	78,487
Jun	1761	21	114,889	114,910
Jul*	1874	22,529	70,120	92,650
Aug*	1874	22,529	70,120	92,650
Sep*	<u>1874</u>	<u>22,529</u>	<u>70,120</u>	<u>92,650</u>
*projected figures				
TOTAL (rounded):	<u>22,500</u>	<u>\$270,000</u>	<u>\$841,000</u>	<u>\$1,111,000</u>

Movement of Material Operations (2193) - This cost account accumulates costs of physically moving material by modes such as straddle truck, mules, open trucks, and transporters between warehouse work areas. As such, this CAC can be considered as a further refinement of the previously mentioned CAC 2191 (General Warehousing Support). The work unit measured is "loaded pallets moved." For FY79, the costs, mostly charged to the Labor and Equipment Division (M-3) of the Material Department, were accumulated as follows:

<u>Month</u>	<u>Work Units</u>	<u>Cost</u>
Oct 78	68,029	41,886
Nov	83,799	45,604
Dec	55,973	35,490
Jan 79	59,095	39,756
Feb	50,250	33,408
Mar	65,287	43,670
Apr	61,189	39,894
May	69,637	45,229
Jun	76,942	47,826
Jul*	65,577	41,418
Aug*	65,577	41,418
Sep*	65,577	41,418
*projected figures		
TOTAL (rounded)	<u>787,000</u>	<u>\$497,000</u>

Customer Services (2211) - Certainly a portion of the general overhead associated with customer service staff work is assignable to local delivery; however, determining the amount that should be allocated is highly speculative. CAC 2211 accumulates costs of receiving requisitions, screening them for accuracy and completeness, maintaining customer liaison, and conducting issue follow-ups and providing requisition status when requested. When the above functions are done solely via ADP, their cost are excluded from this CAC. The work unit is "line items processed manually or

reprocessed." During FY 79, costs were accumulated in CAC 2211 as follows:

Month	Work Units	Cost
Oct 78	76,283	67,886
Nov	83,923	64,380
Dec	72,893	69,946
Jan 79	76,619	81,559
Feb	78,716	70,150
Mar	86,302	75,205
Apr	88,006	74,991
May	91,399	74,210
Jun	91,841	73,344
Jul*	82,886	72,386
Aug*	82,886	72,386
Sep*	82,886	72,386
*projected figures		
TOTAL (rounded)	<u>995,000</u>	<u>\$868,634</u>

MHE Maintenance - This category of costs is not neatly captured by an account in the UMR. Thus the PWC San Francisco BAYFUND Status Report Number 3A86 was used as the data source. MHE maintenance is a sizeable cost, but the portion assignable to local delivery operations is indeterminable, since costs are aggregated and the same equipment can be used in both receiving and delivery operations. NSCO's costs of MHE maintenance were recorded in the report in the following summary fashion:

	Hours	Labor	Material	Total
FY 78	17,507	\$402,175	\$121,226	\$523,401
First half FY 79	10,496	238,806	70,730	\$309,536
Projected FY 79 (rounded)				
(entire year)	<u>21,000</u>	<u>478,000</u>	<u>142,000</u>	<u>\$620,000</u>

D. SUMMARY OF COSTS

This section summarizes the various types of costs previously mentioned; namely, direct, indirect, and "other."

While a total dollar figure related to the cost of distribution is obtainable, to relate it to a measure of productivity in terms of cost per unit is not possible for several reasons. First, the appropriate percentage of cost from each of the CAC's to the distribution of material cannot be assigned without difficulty. In some cases, 100% of the costs could be considered as a cost of distribution while in others, only an approximation of the appropriate percentage could be made. Secondly, mixed work units present a problem. For example, CAC 2125, "Local Delivery," uses measurement ton as a work unit, while CAC 2123, "Bin Issue," uses line items issued as its work unit. Therefore, although costs are additive, the work units associated with them are not.

Table 8 is provided as a summary of all costs addressed by this study. The direct costs and the indirect costs in the table, already apportioned to reflect local distribution, total approximately \$1.6 million. The "other" costs, because they are so commingled, were not apportioned at all. The authors believe that application of a factor (e.g., 15% to reflect the local segment) would have little validity. Thus, local delivery costs were concluded to be somewhere in the range (probably toward the low end) of \$1.6 million to \$4.7 million annually. Based upon one source, the annual operating budget for NSCO is approximately \$45 million. Therefore, approximately one-twentieth to one-tenth of NSCO's budget is associated with the local distribution of material.

Table 8

Summary of Costs

DIRECT:

Vehicle costs	547,606	
Personnel costs	269,159	
Maintenance	<u>47,286</u>	864,051

INDIRECT:

Bin Replenishment	5,800	
Packing Operations	445,000	
Bulk Issue	157,800	
Bin Issue	<u>78,800</u>	687,400

OTHER:

General Storage and Warehousing Support	51,500	
Labor/Equipment Overhead	1,111,000	
Movement of Material	497,000	
Customer Service	868,634	
MHE Maintenance	<u>620,000</u>	<u>3,148,134</u>

Total Cost \$4,699,585

V. MARE ISLAND NAVAL SHIPYARD

Material destined for end use at Mare Island Naval Shipyard (MINS) is received from various sources. Among the various methods used are:

1. Receipt from vendors via commercial carrier
2. Receipt from vendors and the military stock system via United Parcel Service (UPS)
3. Receipt from military stock system via mail
4. Receipt from system stock via QUICKTRANS, Naval Supply Center, Oakland BALD and commercial carrier
5. Receipt from vendors and system stock via commercial air freight, insured, registered and certified mail, and bearer pick-up.

Before describing how these various processes are conducted and indicating exactly what level of support the Naval Supply Center, Oakland is providing, it is appropriate to outline a brief historical synopsis of the receiving operation at MINS. This will provide a general frame of reference.

A. BACKGROUND

During the 1950's, both the shipping and receiving sections were located in building 483. Shipping was a function of the Supply Department, code 500, until 1971, when it was taken over by the Naval Supply Center, Oakland and became a tenant activity. The Shipping Office was located in the north end of the building. All material, with the exception of bar stock, large pipe and steel plate was

shipped from Bldg. 483. Exceptions were shipped from Bldg. 509, now occupied by Naval Electronics System Engineering Command.

The Receiving Section, code 560, was and currently is located in the south end of Bldg. 483 (see figure 5). The receiving dock along the east side of the building was strictly for receiving rail car shipments. There was a receiving dock for other deliveries along the south side of the building with a bay door on the wall where the Code 560 office is now located. The porch running part way along the south side of the building is the remnant of this receiving dock.

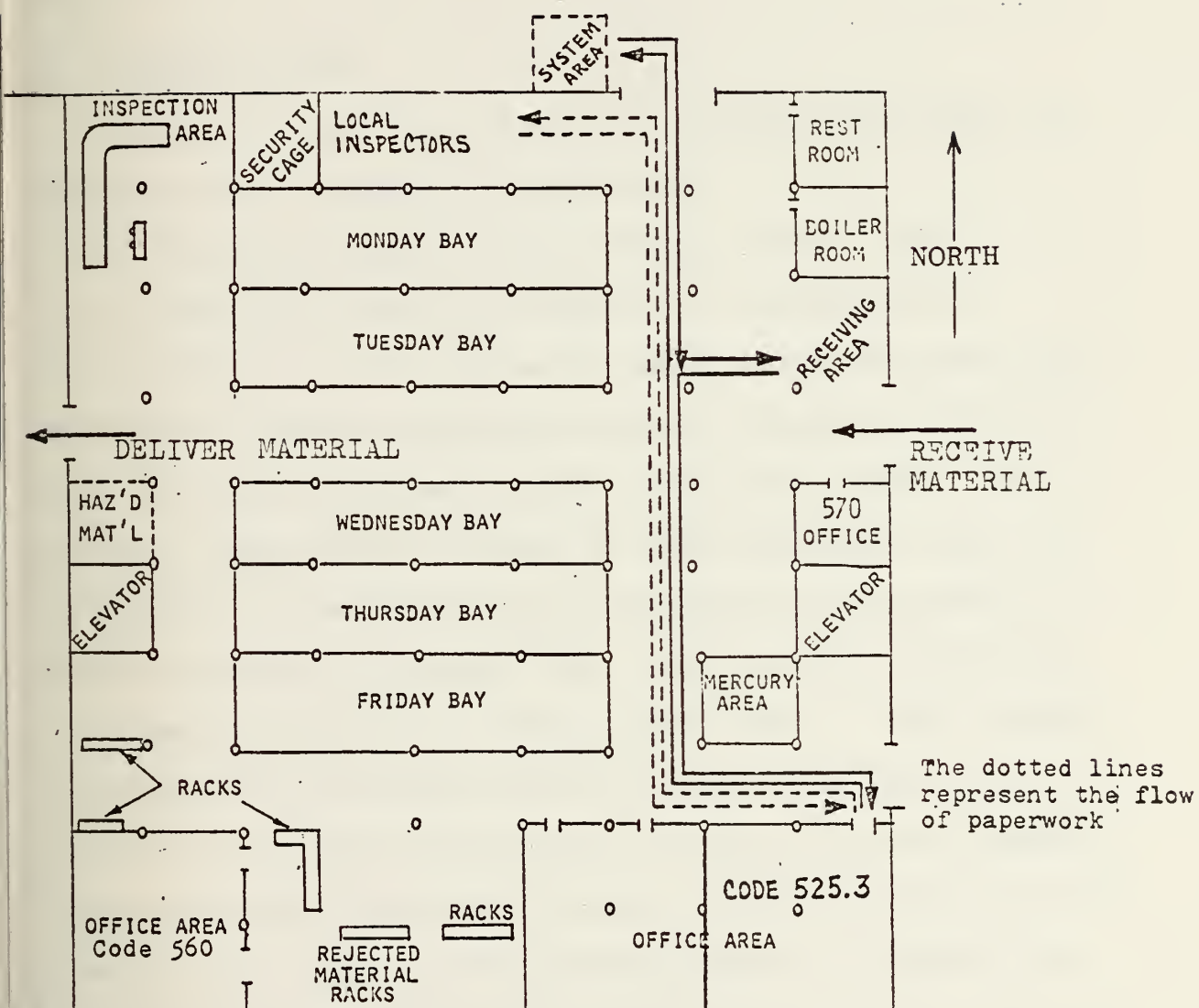
When the Code 560 office was built, the bay doors were walled up and a small door, cut in the area where Code 560's Secretary was located, now allows access to the office from the street without entering the receiving floor. This also meant that the receiving dock along the east side of the building came to be used for all deliveries.

The Receipt Liaison Section, code 525.3, was originally housed in the room where the Receiving Foreman's office is now. They were moved from there and relocated in the Code 560 office area. The area Code 525.3 presently occupies was the Inspection Section in the late 1960's. However, Inspection's staffing was cut and the office was moved out to the receiving floor in the area presently occupied.

A large conveyor system covering the entire section was installed as a result of a Method's Engineering Survey

FIGURE 5

SCHEMATIC OF BUILDING 483



conducted in 1968-69. This has since been dismantled and only portions remain -- the mail line, the UPS line and inspection line.

Screening and Identification was located in the southwest end of the building during the late 1950's. In 1961, the section was moved back to the general area it presently occupies.

B. VOLUME OF WORK

Generally speaking, all material received by MINS falls into two broad categories, these are:

1. Directed Material for Inventory (DMI) items
2. Material presently needed for on-going work.

In the first case, DMI items are those items that have been ordered to support a specific shipyard overhaul related job that is to be conducted at some time in the future. Upon receipt, the material is sent to a DMI warehouse until it is needed. In the second case, the material received is needed to support on-going work. Upon receipt processing it is moved directly to a shop or work area. Also included in this type of material would be those items that would go to the various shop store sites located around the shipyard. These are common-use items related to shipyard work. At the present time, there is no reporting system to account for the various types of material. That is to say, all receipts are treated similarly when considered in the work measurement reports /6/.

In mid-May 1979, the Receiving Office instituted a report that was designed to keep track of the volume of system receipts being handled by the receiving department.^{1/}

Included in the report were the following:

1. Number of system receipts received per day
2. Number of system receipts processed/released per day
3. Number of high priority receipts included in number of system receipts for that day
4. Number of high priority receipts processed
5. Backlog.

The number of high priority receipts was monitored to provide management with a better opportunity to assess the Receiving Department's response capability in preventing potential work stoppages that might arise if the material was not handled in an expeditious manner.

In mid-June 1979, the report was expanded to incorporate material that was ordered under a purchase order/contract. However, in this case the report did not specify high priority items.

Based on these data, the volume of work within the receiving department appears as follows:

^{1/}A system receipt is defined as any material that is provided by any supply activity within the Federal sector.

Receipts From System
18 May - 31 October 1979 (110 days)

	<u>Total</u>	<u>Per Day</u>
Receipts Received	88,209	801.9
Receipts Processed	82,974	754.3
High Priority Receipts (included in total above)	21,200	192.7
High Priority Processed	20,777	188.8
Backlog During Period	42,584	387.1

Receipts From Contracts
7 June - 31 October 1979 (98 days)

Receipts Received	16,866	172.1
Receipts Processed	16,441	167.8
Backlog During Period	5,057	51.6

An initial review of these statistics indicates several interesting points. First, the receipts received exceeds the receipts processed by 5235. This would appear to indicate that a substantial number of receipts were not processed during the period. However, based upon the authors' observations, this was not true since during each visit to MINS to gather data there was no significant buildup in unprocessed work. In the authors' opinion the disparity is more logically attributable to the unfamiliarity on the part of the Receiving Department's personnel with the new reporting system. Second, the backlog figure, while large, is not considered a problem. The reason for this fact is that the backlog figure is a summation of each days backlog during the period and is presented only to indicate a degree of

magnitude. The data did not segregate the backlog according to a time frame and therefore an item could be repetitively counted until it was processed. This had the affect of distorting the average backlog figure.

It is interesting to note that high priority receipts (i.e., when material is ordered on an expedited basis to possibly prevent work stoppage) account for 24% of the total system receipts and perhaps 20.2% of the overall receipts (this assumes no high priority receipts from the contract side).

Extrapolating the data totals from the above table over 12 months, suggests that the Department receives approximately 200,500 system receipts per year and 43,000 contract receipts per year (based upon a 250 day work year).

In September 1979, the Receiving Office again modified the report. At that time a section was included that indicated "items delivered." Items delivered is defined as material which physically leaves the receiving warehouse, building 483, and moves to another location such as the DMI warehouse or a shop for end-use.

In order to present a truer picture of the backlog situation, the reports were retabulated for September and October 1979. The results were as follows:

Items Received
September - October 1979 (40 days)

<u>Receipts</u>	<u>Total</u>	<u>Per Day</u>
From system	34,726	868.1
From contract	6,121	153.0
Total in	40,847	1,021.1
<u>Receipts Processed</u>		
From system	35,106	877.7
From Contract	6,158	153.9
Total Processed	41,264	1,031.6
<u>Items Delivered</u>	36,381	909.5
<u>Items Awaiting Delivery</u>	4,883	122.1

Again a review of these statistics reveals several interesting points. First, there was a greater number of receipts processed than received. In the authors' opinion, this was attributed to a slight increase in productivity for the period during which the backlog was reduced. And second, although this is a relatively small sample, it does seem to indicate that there is a rather short queue, perhaps one day, for undelivered material indicating the material is reaching its ultimate destination in a timely manner. A greater sample, say covering 6 - 12 months, would be more meaningful since it would indicate the more significant fact of whether that short queue was static or growing.

In an effort to determine the extent of support provided by NSCO, file FH84G1, task H0658 was analyzed. This monthly

report displays the "Top 50 Customers" supported by NSCO on a monthly basis based upon requisitions submitted. An eleven-month period (Oct 78-Sept 79) was reviewed. (The report was not run in August 1979). Based upon these data, NSCO provided the following support to Mare Island:

Top 50 Synopsis

October 1978 - September 1979, excluding August 1979

Requisitions submitted by MINS:	68,998
Issues made by NSCO ^{1/}	
Issue Group I	9,010
Issue Group II	7,580
Issue Group III	22,434
	<hr/>
Total	39,024

Using a straight-line extrapolation, this would mean that NSCO would make 42,571 issues per year to Mare Island's UIC. Since the submarines undergoing overhaul at MINS also receive their material through the Shipyard Receiving Department, their receipts (based upon data contained in Appendix A) can be added to produce an annual total of approximately 58,300. This represents approximately 29% of the total system material received at MINS. This seems to imply that a significant portion of system material is received by MINS from other sources through various methods. Unfortunately, the reports utilized to gather these data do not provide sufficient detail to determine these alternate sources and methods. How-

^{1/}The remainder of the requisitions which were submitted by MINS but not issued by NSCO were forwarded to another Supply Activity for action.

ever, in the future, a new methods-engineering report (implemented November 1979) will provide greater detail with regards to method of receipt, although it will still not address point of origin.

C. THE RECEIVING FUNCTION

As previously mentioned, delivery via BALD trucks to MINS is performed on a daily basis. Upon arrival, the material is received in accordance with a rather standardized procedure. It can be basically described in the following general outline:

1. Unload the truck;
2. Ensure shipment is free from transportation discrepancies;
3. If transportation discrepancies are discovered, prepare appropriate paperwork;
4. Count and verify material was shipped as billed;
5. Perform preliminary screening of material;
6. Pull samples when required;
7. Stow material in appropriate holding areas pending delivery instructions;
8. Effect the delivery of material from Bldg. 483;
9. Report material received to the Shipyard Records System.

The overall receiving process is composed of several interdependent segments. In addition to the actual receiving, there is inspection of material and processing of the paperwork associated with the material. These functions are interdependent, and the material cannot be delivered to the

end user until the various functions have been performed. Therefore, Appendix D has been included and outlines in detail the receiving function, the paperwork processing function, and the inspection process. When these various steps have been completed, the material is then delivered to the ultimate destination.

The last step relating to the physical movement of the material from the receiving warehouse to the ultimate destination is performed in several ways. Currently, there are two Public Works Center (PWC) drivers assigned on an eight hours per day basis to the receiving/delivery operation. These individuals deliver material on a more or less continuous basis as it becomes available throughout the day. In addition, there are two persons assigned to the Receiving Department that drive shuttle car trains on an "as required" basis. These shuttles are normally composed of a gasoline powered tractor along with anywhere from two to four cars depending upon the amount of material to be delivered at the time. The shuttle car drivers normally handle the expedited/high priority material.

VI. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. SUMMARY AND CONCLUSIONS

This thesis has examined the existing material distribution activities associated with providing supply support to the local customers of the Naval Supply Center, Oakland. An overview analysis of the existing local distribution functions was to be an integral part in the formulation of a baseline that could be compared against a proposed general material distribution system to be eventually used in all tidewater areas. The overall goal of such a general system was to reduce costs without a loss in effectiveness or service to customers. By the nature of the problem and because of the lack of discreteness in the data available, quantification of costs became a matter of gross approximation. Thus, the comparison baseline being sought was addressed in general terms, with the primary thrust of the thesis aimed at providing a working description of the existing distribution operations.

Material and document flows to local customers were identified in terms of volumes of business, distances traveled, and times involved. It was noted that local customers constitute only about fifteen percent of NSCO's total support business. Realizing the wide divergence of local customers supported, a clearer perspective on requisitioning volume can be gained by examining the following "large customer" summary of Appendix A:

<u>Customer</u>	<u>Percentage of Local Business</u>	<u>Annual Requisitions Filled by NSCO (x000)</u>
Afloat units	46.5	341
Mare Island NSY	12.3	42
NARF Alameda	7.8	26
NSCO	6.3	22
NAS Alameda	6.1	21
NAS Moffett	4.7	16
FMAG Alameda	1.7	6
PWC San Francisco	1.4	5
TOTAL	86.8	479

An examination of the existing transportation system, BALD, used to support local customers, revealed that it appears to be effective in satisfying customer needs in a timely and reliable manner; however, the efficiency of the BALD system was not measurable, making the follow-on analysis of alternate delivery modes less definitive, since an "apples and oranges" comparison ensued.

In addition to the obvious transportation costs, several peripheral costs such as delivery equipment usage, related labor costs, and AMHS maintenance costs were found to be clearly assignable to the local distribution effort and were addressed as "direct" costs. The less directly assignable costs, those that were spread over several applications, were addressed as "indirect" costs; included in this category were the costs associated with issuing (picking) from both bulk and bin locations, packing, and bin replenishment, along with the related supervisory costs. Finally, those costs that were indistinguishable (commingled in different end applications) were addressed as "other" costs. These "other" costs included warehousing support, overhead, customer service operations, and MHE maintenance.

In general, the costs were analyzed and related to local distribution with relative ease, but the work units used to measure output varied between CAC's, making impossible either an accurate "bottom-line" determination of total annual cost of supporting local customers, or a computation of an average cost per item delivered locally; however, the authors concluded that NSCO's annual cost of local delivery was at least \$1.6 million, but less than \$4.7 million. In other words, approximately one-twentieth to one-tenth of NSCO's budget is associated with the local distribution of material.

Because of its size in terms of volume of business, and because no such analysis had been previously attempted, a special emphasis was placed on material distribution to, and within, Mare Island Naval Shipyard. The analysis of the data contained in the rudimentary reporting system instituted by the Receiving Office showed that although MINS is NSCO's single largest customer in terms of requisitions submitted, MINS relies on NSCO for less than 30% of its supply support. In the opinion of the authors, it appears to be far too small a percentage for such a large industrial customer in the immediate proximity. There is, perhaps, a hidden opportunity to affect significant cost savings by MINS increasing its reliance upon NSCO. This would be in agreement with the basic DODMDS recommendation to locate the source of supply as close to the customer as possible.

B. RECOMMENDATIONS

1. The material distribution function at NSCO is, in the authors' opinion, fragmented (particularly with separate Material and Traffic Departments), thus becoming a prime candidate for restructuring. It is also recommended that the general material distribution system concept be pursued at NSCO for possible application to other tidewater areas as well. The advent of the automated Naval Integrated Storage Tracking and Retrieval System (NISTARS) makes a "systems" approach to material distribution even more imperative.

2. Regarding the transportation segment of the distribution process, the efficiency aspect of the existing BALD system was not conclusively addressed due to time and resource constraints; thus a cost comparison of BALD with alternative transportation modes was less definitive. The authors recommend that the transportation segment be studied in greater depth, possibly on a Naval Supply Systems Command Headquarters level because of the need for a coordinated effort at all tidewater activities, and the likely event of area-wide contracts being issued as a cost saving measure.

3. A major problem in performing the analysis in this thesis was the lack of discrete data with common work units. The authors recommend that NSCO consider adding to their management information systems the tools necessary to better capture physical distribution system data. A quantifiable baseline cost could then be drawn.

4. There appears to be fertile ground for significant cost savings in the material support functions performed by NSCO for the industrial activities at the NARF Alameda and Mare Island Naval Shipyard. The following data give the reader a rough perspective of the industrial activity as compared with the magnitude of operations at NSCO /2/:

	<u>Personnel</u>	<u>Budget (Operating)</u>
NSCO	2,000	\$ 45 million
NARF	5,000	200 million
NSY	10,000	300 million

Studies have shown that a typical industrial worker, a mechanic, spends as much as 45% of his time in search of parts /2/. If NSCO were to somehow reduce his search time by, say, 10%, the annual cost savings that could be enjoyed by the Navy would be on the order of magnitude of NSCO's entire yearly budget! NAVSUP is pursuing one such concept for reducing the workers' search time for parts in an industrial environment. The concept, known as Automated Storage Kitting Retrieval System (ASKARS), envisions using computers to monitor job-related material requirements in groups (kits), similar to the manual way Direct Material Inventory (DMI) operates at Naval Shipyards. The ASKARS concept is being considered for on-site study at MINS, making it an excellent potential thesis topic(s) for NPS students.

5. In addition to the ASKARS approach to effecting cost savings, the large operating budget at MINS, coupled with the aforementioned 29% NSCO reliance rate, has led the authors to believe that NSCO should work closely with this huge

local customer to pursue ways of increasing supply support (range).

6. It is the authors' opinion that the initial step in pursuing ways of increasing supply support to MINS would require a more in-depth examination. The research was limited by the current management reporting system which does not allow a point of origin analysis for the material being processed by the Receiving Department. Determining the point of origin for the MINS receipts from non-NSCO sources and verifying the exact percentage (71%) are worthy of further study since one recommendation made by the DODMDS Study, mentioned in the introduction, was to close the Defense Logistic Agency activities at Tracy and Ogden. If MINS does indeed receive a significant portion of its material from DLA, it may be advantageous to relocate many of the Tracy/Ogden items at Oakland.

APPENDIX A

Local Customers Served by NSC Oakland
Grouped by Geographic Cluster

APPENDIX A

Local Customers Served by NSC Oakland Grouped by Geographic Cluster

Geographic Cluster	Activity	Requisitions (12 mos.)	% of Total
1	NSC, Oakland	21,525	6.31
	PWC, San Francisco	4,894	1.43
	Military Sealift Command Pacific, Oakland	2,408	.71
	Naval Biosciences Lab, NSC Oakland	346	.10
	Naval School Transportation Management, Oakland	89	.02
	Navy Commissary Store, Oakland	153	.04
	TOTAL CLUSTER 1	<u>29,415</u>	8.6
2	NARF, Alameda	26,491	7.76
	Naval Air Station Supply Department, NAS Alameda	20,863	6.11
	Fleet MAG, NAS Alameda	5,696	1.67
	Navy Exchange, NAS Alameda	1,196	.35
	Naval Air Reserve Unit, NAS Alameda	648	.19
	Marine Training Detachment, NAS Alameda	323	.09
	NVA 304, NAS Alameda	281	.08
	VA 303, NAS Alameda	253	.07
	VAQ 208, NAS Alameda	117	.03
	VAQ 308, NAS Alameda	101	.03
	Marine Air Reserve Training Detachment, NAS Alameda	169	.05
	Navy Weather Facility, Alameda	76	.02
	Navy Regional Data Center, NAS Alameda	79	.02
	Fleet Logistics Support Sqd, VR55, NAS Alameda	52	.02
	Marine Barracks, NAS Alameda	30	.01
	Navy Disease Vector, NAS Alameda	12	.00
	VR 3, NAS Alameda	2	.00
	TOTAL CLUTER 2	<u>56,389</u>	16.5
3	Mare Island Naval Shipyard, Mare Island	41,905	12.28
	Naval Electronic System Engineering Center, Mare Island	1,956	.57
	Combat System Technical School, Mare Island	1,896	.55
	Special Boat Unit, Mare Island	1,734	.51
	NAVSECGRU, Skaggs Island	1,466	.43
	Naval Support Activity, Mare Island	1,307	.38
	Navy Exchange, Mare Island	658	.19
	N&MC Reserve Center, Mare Island	69	.02
	AFB Exchange, Travis AFB	60	.02
	Marine Barracks, Mare Island	35	.01
	Coast Guard Station, Mare Island	44	.01
	84 OMS NC 39, Richmond	3	.00
	TOTAL CLUSTER 3	<u>51,133</u>	15.0

continued

Geographic Cluster	Activity	Requisitions (12 mos.)	% of Total
4	Naval Weapons Station, Concord	2,098	.61
	Marine Barracks, Concord	595	.17
	83 OMS NC 22, Benicia	6	.00
	AFSFU, Concord	2	.00
	Point Safety, Concord	0	.00
	TOTAL CLUSTER 4	<u>2,701</u>	.8
5	NAS Moffett Field, NAS Moffett Field	15,905	4.66
	Patrol Wings, NAS Moffett Field	1,129	.33
	Navy Exchange, NAS Moffett Field	1,270	.37
	Det Flt Av Sp Operation Training Group	384	.11
	VP 91 Det 1, Moffett Field	381	.11
	HS 85 Alameda	155	.04
	VP 31, NAS Moffett Field	156	.04
	NASA, Moffett Field	173	.05
	VP 48	118	.03
	Naval Reserve Center, San Jose	115	.03
	VP 50	79	.02
	VP 40	85	.02
	VP 47	82	.02
	VP 9	88	.02
	VP 19	61	.02
	Naval Weather Env Detachment, NAS Moffett Field	24	.01
	VP 46	22	.01
	Navy Air Maint Tra Det, NAS Moffett Field	11	.00
	Graphics, San Jose	5	.00
	TOTAL CLUSTER 5	<u>20,243</u>	5.9
6	COMSTA, Stockton	1,869	.55
	Base Supply Officer Tracy, Tracy	220	.06
	Army Auxilliary Support Facility, Stockton	32	.01
	Boating Safety Team No. 12, Stockton	4	.00
	TOTAL CLUSTER 6	<u>2,125</u>	.6
7	SUPSHIPS, Hunters Point, San Francisco	1,556	.45
	Naval Support Activity, Treasure Island	1,239	.36
	WHEC 725	2,610	.37
	Navy Technical Training Center, T.I.	394	.11
	WHEC 723	626	.18
	Coast Guard Air Station, San Francisco	671	.20
	WMEC 620, T.I.	561	.16
	Coast Guard Station, T.I.	547	.16
	COMSY, Presidio	509	.15
	WHEC 722	522	.15
	Navy Recruiting District Office, San Francisco	218	.06

continued

Geographic Cluster	Activity	Requisitions (12 mos.)	% of Total
	Navy Regional Dental Center, San Francisco	153	.04
	WLB 390, YBI	289	.08
	Navy Reserve Readiness, Region 20, S.F.	303	.11
	NAVFAC Eng Cmd, Western Div, San Bruno	88	.03
	Naval Rec Center, T.I.	212	.06
	Coast Guard Station, YBI	88	.03
	Naval Plant Rep, Sunnyvale	43	.01
	Ft Point, Presidio	77	.02
	Naval Reserve Center, San Bruno	58	.02
	Bethlehem Steel, San Francisco	130	.04
	N R Mobile Construction Battalion 2, T.I.	39	.01
	Nav Res Mine INS, T.I.	30	.01
	NR Har Clearance Unit Det 220, NMCRC, S.F.	40	.01
	NIS, T.I.	17	.01
	Maintenance Tech Veh, Presidio	49	.01
	Prop SFF, Presidio	40	.01
	HQ, MCD, T.I.	75	.02
	WPB 82360, T.I.	33	.01
	WBB 82348, T.I.	32	.01
	WPB 82369, YBI	20	.01
	AMSA, Presidio	22	.01
	Radar Station, T.I.	20	.01
	Mobile Technical Unit 9, T.I.	10	.00
	CLD Sales Store, Presidio	17	.01
	Fiscal Office, T.I.	28	.01
	Coast Guard, T.I.	10	.00
	Self Supply Store, Presidio	11	.00
	FAC, Presidio	9	.00
	FAC Eng Rep, Presidio	7	.00
	602 MP, Presidio	5	.00
	FASFC, San Francisco	2	.00
	MARDIV FMF, San Bruno	1	.00
	Signal Corps, Presidio	3	.00
	Regional Finance Serv Dep, T.I.	1	.00
	Base Post Office, Presidio	1	.00
	TOTAL CLUSTER 7	<u>11,416</u>	3.3
8	Navy Regional Medical Center, Oakland	1,828	.54
	Global Associates, Oakland	1,112	.33
	Coast Guard, Government Island, Alameda	690	.20
	Navy Reserve Center, Alameda	251	.07
	DPSC, Alameda	58	.02
	NROTC, Berkeley	21	.01
	MCRS, Alameda	31	.01
	PROP Office MTMC, Oakland	4	.00
	NAV Rec Center, Alameda	2	.00
	TOTAL CLUSTER 8	<u>4,003</u>	1.2

continued

Geographic Cluster	Activity	Requisitons (12 mos.)	% of Total
9	Other Professional ED, NPS, Monterey	480	.14
	NPS, Monterey	306	.09
	Fleet Weather, Monterey	88	.03
	Env Pred Research Facility, Monterey	53	.02
	Nav Res Center O, Pacific Grove	74	.02
	Coast Guard Station, Monterey CG, Monterey	22	.01
	Coast Guard, Monterey	10	.00
	WPB 95310, Monterey	15	.00
	Army STRAJ Command, Fort Ord	13	.00
	Def Res Management Center, Monterey	4	.00
	TOTAL CLUTER 9	<u>1,065</u>	.3

Afloat Units Served by BALD

Activity		Requisitions (12 mos.)	% of Total
AE 22	USS MAUNA KEA	4,684	1.37
AE 24	USS PYRO	2,667	.78
AE 25	USS HALEAKALO	1,999	.59
AE 26	USS KILOUEA	2,753	.80
AE 29	USS MT HOOD	3,779	1.11
AE 32	USS FLINT	3,866	1.13
AE 33	USS SHASTA	5,180	1.52
AE 35	USS KISKA	4,050	1.19
AFS 1	USS MARS	11,650	3.41
AFS 3	USS NIAGARA FALLS	12,225	3.58
AFS 7	USS SAN JOSE	5,186	1.52
AOR 1	USS WICHITA	4,436	1.30
AOR 2	USS MILWAUKEE	0	.00
AOR 3	USS KANSAS CITY	4,594	1.35
AOR 5	USS WABASH	6,602	1.93
AOR 7	USS ROANOKE	0	.00
AR 7	USS HECTOR	19,119	5.60
CV 43	USS CORAL SEA	9,697	2.84
CVN 65	USS ENTERPRISE	25,488	7.45
DD 825	USS CARPENTER	1,653	.48
FF 1055	USS HEPBURN	4,848	1.42
FF 1076	USS FANNING	2,880	.84
FF 1083	USS COOK	5,545	1.62
LKA 112	USS TULARE	2,535	.74
MSO 439	USS EXCEL	1,092	.32
MSO 489	USS GALLANT	1,176	.34
SSBN 598	USS GEORGE WASHINGTON	746	.22
SSBN 599	USS PATRICK HENRY	834	.24
SSBN 601	USS ROBERT E. LEE	1,217	.35
SSN 575	USS SEAWOLF	251	.07
SSN 592	USS SNOOK	280	.08
SSN 594	USS PERMIT	1,792	.52
SSN 595	USS PLUNGER	392	.11
SSN 621	USS HADDOCK	3,841	1.13
SSN 639	USS TAUTOG	1,242	.36
SSN 683	USS PARCHE	396	.12
TOTAL AFLOAT		158,875	46.5
Sub Development Group 1 San Diego		4,088	1.20
GRAND TOTAL		341,354	100.00

APPENDIX B

Uniform Management Reports

ACTIVITY 00266 MSC DAK-AND/ CALIFORNIA

SC 3A
FC 3B
CA 2114 BIN REPLENISHMENT OP

SUPPLY OPERATIONS
DIRECT+RELAB

COST CENTER
M1 STORAGE DIVISION

APPROPRIATION 1791804-6371

MO	DA-Y	WEEK	UNITS	BACKLOG	PROD RATE	MAN-HOURS	EXPENDED	FIXED	PE	CIV REQ	CIV OF	MAN-MONTHS	CONTRACT	TOTAL	EMPLOYEE VARIANCE
Q1	1	1	4111		5.79	304				2.2				2.2	
Q2	1	1	1988		5.67	317				2.2				2.2	
Q3	1	1	1289		4.61	343				2.1				2.2	
Q4	1	1	3455		5.37	1,059				2.2				2.2	
Q5	1	1	2035		4.30	573				2.7				2.7	
Q6	1	1	1982		5.21	351				2.4				2.4	
Q7	1	1	1721		5.00	356				2.0				2.0	
Q8	1	1	5459		4.73	1,171				2.4				2.4	
Q9	1	1	11287		5.05	2,274				2.3				2.3	
Q10	1	1	1611		6.07	204				1.6				1.6	
Q11	1	1	1783		5.75	257				1.5				1.5	
Q12	1	1	1280		4.57	250				1.7				1.7	
Q13	1	1	4534		5.75	501				1.6				1.6	
Q14	1	1	18021		5.25	3,021				2.0				2.0	

MO	DA-Y	WEEK	UNITS	BACKLOG	PROD RATE	MAN-HOURS	EXPENDED	FIXED	PE	CIV REQ	CIV OF	MAN-MONTHS	CONTRACT	TOTAL	EMPLOYEE VARIANCE
Q1	1	1	4111		5.79	304				2.2				2.2	
Q2	1	1	1988		5.67	317				2.2				2.2	
Q3	1	1	1289		4.61	343				2.1				2.2	
Q4	1	1	3455		5.37	1,059				2.2				2.2	
Q5	1	1	2035		4.30	573				2.7				2.7	
Q6	1	1	1982		5.21	351				2.4				2.4	
Q7	1	1	1721		5.00	356				2.0				2.0	
Q8	1	1	5459		4.73	1,171				2.4				2.4	
Q9	1	1	11287		5.05	2,274				2.3				2.3	
Q10	1	1	1611		6.07	204				1.6				1.6	
Q11	1	1	1783		5.75	257				1.5				1.5	
Q12	1	1	1280		4.57	250				1.7				1.7	
Q13	1	1	4534		5.75	501				1.6				1.6	
Q14	1	1	18021		5.25	3,021				2.0				2.0	

CROSS DELIB UNDELIVERED ORDERS CONSIGNMENTS PRIOR YR EXP

3,200.75
33,557.00

ACTIVITY 02228 NSC OAKLAND, CALIFORNIA
 DE JUNE 2228 VSC
 APPROPRIATION 1791004:6371

COST CENTER
 DIRECT REIMB M1 STORAGE DIVISION

431	DATE	MARK	UNITS	BACKLOG	PROJ RATE	MAN-HOURS	FIXED HOURS	PE	CIV REQ	CIV OF MILITARY CONTRACT	TOTAL	EMPLOYEE VARIANCE
301	AVE	W/O	3719		15.21	247	247		1.5		1.5	
NOV	15	34097			9.80	318			2.0		2.0	
DEC	31	17829			11.17	193			1.0		1.0	
JAN	12	56644			11.91	723			1.5		1.5	
FEB	28	27002			12.43	131			.9		.9	
MAR	31	17348			13.82	171			.9		.9	
APR	30	27459		120	9.16	257			1.5		1.5	
MAY	31	52399			11.24	339			1.1		1.1	
JUNE	30	152043			11.63	1723			1.3		1.3	
301	117	27464			10.88	240			1.1	.3	1.3	
NOV	37	17913		12	9.35	235			1.3	.1	1.2	
DEC	31	17959		11	24.19	31			.5		.5	
JAN	30	57336			12.39	216			.9	.1	1.0	
FEB	28	21379			11.87	1935			1.2		1.2	

431	CIV REQ	CIV D/T	MILITARY CONTRACT	MATERIAL	OTHER	TOTAL	UNIT COST	PR LVE	STAFFING	IL STAFF
301	2157.59					2157.59	.73	.2	1.7	1.7
NOV	3454.56					3454.56	1.15	.3	2.3	2.3
DEC	1731.07					1731.07	1.06	.2	1.3	1.3
JAN	3413.41					3413.41	.95	.3	1.7	1.7
FEB	1795.20					1795.20	.93	.1	1.0	1.0
MAR	1734.49					1734.49	.83	.1	1.0	1.0
APR	3421.93					3421.93	1.27	.2	1.7	1.7
MAY	6344.56					6344.56	1.34	.1	1.3	1.3
JUNE	17325.37					17325.37	.99	.2	1.5	1.5
301	2727.19	745.59				2727.19	1.13	.1	1.2	1.5
NOV	2740.88	233.36				2740.88	1.16	.2	1.4	1.3
DEC	235.53					235.53	.48	.1	.6	.5
JAN	5731.92	427.23				5731.92	.94	.1	1.1	1.1
FEB	2740.88	427.23				2740.88	.97	.2	1.4	1.4
MAR	2740.88	427.23				2740.88	.97	.2	1.4	1.4

GRAND TOTAL UNDELIVERED ORDERS CONSIGNMENTS PRIOR YR EXP

WUN M
 YTD 207794.52

UNIFORM MANAGEMENT REPORT - A

US40
ACTIVITY 00269 NSC OAKLAND, CALIFORNIA

DE JULY 20 1968 VSC 1791304.6371

APPROPRIATION 1791304.6371

REIADJASALE COST CENTER MATERIAL DEPARTMENT

CENTRAL DEPARTMENT

[illegible]

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RUSS GALT UNDELIVERED ORDERS - CONSTITUTIONAL RIGHTS - PROTON YR EAP

20994062

ACTIVITY 00228 NSC OAKLAND, CALIFORNIA BUC SA
 DE 00228 NSC
 APPROPRIATION 1791804.6371
 FUND 2141
 PROJ MAN-HOURS FIXED
 RATE EXPENDED HOURS PE
 BACKLOG
 CIV REG CIV OF MILITARY CONTRACT TOTAL
 REIMBURSABLE M3 LABOR & EQUIP CIV
 COST CENTER
 MAY-131THS
 EXP-DY2E
 VARIANCE

ACTIVITY	DE	APPROPRIATION	FUND	PROJ	MAN-HOURS	FIXED	RATE	EXPENDED	HOURS	PE	CIV REG	CIV OF MILITARY CONTRACT	TOTAL	UNST	MAN-MONTHS
001															
002															
003															
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REIMBURSABLE COST CENTER
 TI PACKING & PRSRVIN DIV

DATE	DAY	W/O	ACTS	BACKLOG	PROJ	MAN MONTHS	FIXED	PE	CIV	RES	CIV	RES	CONTRACT	TOTAL	EMPLOYEE	VARIANCE
001						1,000	1,000		2.7		2.7			3.5		
002						1,000	1,000		1.0		1.0			6.5		
003						1,000	1,000		2.7		2.7			5.5		
004						1,000	1,000		2.4		2.4			5.1		
005						1,000	1,000		2.1		2.1			2.8		
006						1,000	1,000		4.0		4.0			5.8		
007						1,000	1,000		3.0		3.0			5.6		
008						1,000	1,000		3.0		3.0			4.8		
009						1,000	1,000		3.1		3.1			4.9		
010						1,000	1,000		6.1		6.1			7.1		
011						1,000	1,000		4.3		4.3			4.8		
012						1,000	1,000		4.3		4.3			5.3		
013						1,000	1,000		4.9		4.9			5.7		
014						1,000	1,000		3.7		3.7			5.2		

UNIT	COST	PR	AVE	STAFFING	TO	STAFF
001	7,703.50	4	3.1	3.1	3.9	
002	15,599.35	3	2.0	2.0	6.6	
003	16,537.68	7	3.4	3.4	6.2	
004	40,121.03	5	2.9	2.9	5.5	
005	6,701.29	3	2.4	2.4	3.1	
006	12,254.50	5	4.9	4.9	6.3	
007	13,553.43	6	5.6	5.6	6.4	
008	32,033.57	4	4.3	4.3	5.2	
009	72,755.50	2	3.0	3.0	5.4	
010	16,293.07	8	7.0	7.0	7.9	
011	13,553.43	6	4.9	4.9	5.4	
012	12,254.50	7	5.0	5.0	6.0	
013	42,017.53	7	5.6	5.6	6.4	
014	11,477.3.13	5	4.3	4.3	5.7	

EXPENSES
 MILITARY CONTRACT
 MATERIAL
 OTHER
 TOTAL

DATE	DAY	W/O	ACTS	BACKLOG	PROJ	MAN MONTHS	FIXED	PE	CIV	RES	CIV	RES	CONTRACT	TOTAL	EMPLOYEE	VARIANCE
001						1,000	1,000		2.7		2.7			3.5		
002						1,000	1,000		1.0		1.0			6.5		
003						1,000	1,000		2.7		2.7			5.5		
004						1,000	1,000		2.4		2.4			5.1		
005						1,000	1,000		2.1		2.1			2.8		
006						1,000	1,000		4.0		4.0			5.8		
007						1,000	1,000		3.0		3.0			5.6		
008						1,000	1,000		3.0		3.0			4.8		
009						1,000	1,000		3.1		3.1			4.9		
010						1,000	1,000		6.1		6.1			7.1		
011						1,000	1,000		4.3		4.3			4.8		
012						1,000	1,000		4.3		4.3			5.3		
013						1,000	1,000		4.9		4.9			5.7		
014						1,000	1,000		3.7		3.7			5.2		

UNDELIVERED ORDERS
 PRIOR YR EXP

DATE	DAY	W/O	ACTS	BACKLOG	PROJ	MAN MONTHS	FIXED	PE	CIV	RES	CIV	RES	CONTRACT	TOTAL	EMPLOYEE	VARIANCE
001						1,000	1,000		2.7		2.7			3.5		
002						1,000	1,000		1.0		1.0			6.5		
003						1,000	1,000		2.7		2.7			5.5		
004						1,000	1,000		2.4		2.4			5.1		
005						1,000	1,000		2.1		2.1			2.8		
006						1,000	1,000		4.0		4.0			5.8		
007						1,000	1,000		3.0		3.0			5.6		
008						1,000	1,000		3.0		3.0			4.8		
009						1,000	1,000		3.1		3.1			4.9		
010						1,000	1,000		6.1		6.1			7.1		
011						1,000	1,000		4.3		4.3			4.8		
012						1,000	1,000		4.3		4.3			5.3		
013						1,000	1,000		4.9		4.9			5.7		
014						1,000	1,000		3.7		3.7			5.2		

APPENDIX C

Cost Account Codes Used in Analysis

APPENDIX C

COST ACCOUNT CODES USED IN ANALYSIS

2114 BIN REPLENISHMENT OPERATIONS

Scope. This cost account includes all physical handling incident to the movement of material from bulk locations to bin storage areas for the purpose of replenishing bin stock levels. Man-hours expended and work units accomplished that are to be counted in this cost account will include the following functions:

(1) Physical handling and stowage of binnable items transferred from bulk locations for the purpose of replenishing bin stock levels

(2) Processing of movement documentation incident to the replenishment of bin stocks

(3) Operation of assigned material handling equipment incident to replenishment of bin stocks

(4) Direct (first level) supervision of the foregoing operations

Exclusions. Man-hours and work units to be excluded from cost account are those for the following functions:

(1) Physical handling and stowage of material incident to regular incoming bin storage operations

(2) Physical handling and movement of material from one bin location to another for the purpose of consolidating stocks or as a result of stock number changes (see Cost Account #2131, Care of Material in Storage)

(3) Physical handling and movement of material from one location to another incident to relocating bin storage on a project/scheduled basis (see Cost Account #2132, Re-warehousing)

(4) Physical handling and unloading of material received from preservation, packaging and packing areas when such operations are related to the care of material in storage (see Cost Account #2131, Care of Material in Storage)

(5) Second level and above supervision, clerical and service support that is applicable to this function or one or more other function areas in the receipt, packing and issue operations (see Cost Account #2129, Incoming Storage, Packing and Issue Support)

Work Unit. Line Items Stowed

(1) Definition. Line items of replenishment material stowed in bin storage areas, excluding regular incoming bin material storage operations.

(2) Point of Count. Upon completion of bin stowage of replenishment material during the reporting period.

(3) Backlog. Will not be reported.

2120 PACKING AND ISSUE

2121 PACKING OPERATIONS

Scope. This cost account includes the packing, over-packing, or repacking (including recoopering) of all material for storage and domestic or overseas shipment. Man-hours expended and work units accomplished that are to be counted in this cost account will include the following functions:

(1) Physical handling of material incident to packing and marking

(2) Marking, packing and strapping subsequent to preservation of material

(3) Packing material in local delivery/storekeeper packs, such as loosely sealed cartons and heavy paper bags, when performed in a packing line type

(4) Overpacking and placing of exterior protective covers on items incident to shipping operations

(5) Repacking of material incident to transshipment and direct turnover operations

(6) Completion of boxes from purchased shooks and reworking of used boxes

(7) Assembly of prefabricated corrugated and solid fiberboard containers

(8) Assembly and fabrication of specialized corrugated and solid fiberboard cartons and wooden boxes from raw stocks as required

(9) Assembly and fabrication of crates and skids

(10) Strapping of containers for shipment as required

(11) Preparing packing labels as required

(12) Processing packing documents as required

(13) Strapping and marking of material which is "shipped as received"

(14) Direct (first level) supervision of the foregoing operations

Exclusions. Man-hours and work units to be excluded from this cost account are those for the following functions:

(1) Packing and crating of personal property shipments (see Cost Account series 2330, Personal Property)

(2) Packaging incident to the preservation of material (see Cost Account #2133, Preservation and Packaging)

(3) Stuffing shipping containers (see Cost Account #2126, Container Stuffing Operations)

(4) Maintaining postal registration records incident to the shipment of Foreign Military Sales material (see Cost Account #2311, Freight Documentation)

(5) Second level and above supervision, clerical and service support that is applicable to this function or one or more other functional areas in the receipt, packing and issue operations (see Cost Account #2129, Incoming Storage, Packing and Issue Support)

Work Unit. Packed Cube (Cubic feet of packed material)

(1) Definition. The number of cubic feet of material packed during the reporting period. Outside dimensions of fully utilized packing containers or exterior dimensions of banded or shrink wrapped material will be used to compute packed cube.

(2) Point of Count. Upon completion of packing and marking, at the time the material is: (a) turned over to the shipping/transportation officer, or (b) placed in the mail system, or (c) placed in storage.

(3) Backlog. Cubic feet of material on hand in packing work areas awaiting packing and marking at the end of the reporting period.

2122 . BULK ISSUE OPERATIONS

Scope. This cost account includes all physical handling (including the operation of materials handling equipment) incident to the breaking out of material for issue from large and medium lot bulk stores, including material for transfer to disposal area. Man-hours expended and work units

accomplished that are to be counted in this cost account will include the following functions:

(1) Loading bulk material for movement to shipping

(2) Loading bulk material for movement to packing, preservation, bin location, shop stores, SERVMARTS, or advance base assembly areas, when no intermediate operations are necessary prior to consolidation of material being issued

(3) Loading bulk material for movement to Local Delivery

(4) Loading of material in bulk storage areas for delivery to surface, air or marine terminals

(5) Direct (first level) supervision of the foregoing operations.

Exclusions. Man-hours and work units to be excluded from this cost account are those for the following functions:

(1) Physical movement of material from one bulk storage location to another (see Cost Account #2132, Rewarehousing)

(2) Physical handling, selection and loading or off-loading of material to and from preservation, packaging and packing areas, or repair shops for minor repairs, when such operations are incident to care of material in storage (see Cost Account #2131, Care of Material in Storage)

(3) Physical handling of bulk stock from permanent storage location directly into transportation equipment for final shipment or delivery (see Cost Account #2124, Shipping or 2125, Local Delivery)

(4) Second level and above supervision, clerical and service support that is applicable to this function or one or more other functional areas in the receipt, packing and issue operations (see Cost Account #2129, Incoming Storage, Packing and Issue Support)

Work Unit. Measurement Tons (M/T) Issued

(1) Definition. Measurement tons (1 M/T = 40 cubic feet) of material physically handled incident to the issue of material from bulk storage for shipment or delivery, including issues to SERVMARTS, shop stores or disposal.

(2) Point of Count. Upon completion of the processing of the issue document in bulk storage, or as an alternative, at the last work center handling the material (i.e., Shipping).

If the alternative is used, it is understood that the M/T of bin material issued must be excluded from the work units reported under this cost account.

(3) Backlog. Will not be reported.

2123 BIN ISSUE OPERATIONS

Scope. This cost account includes all physical handling incident to the drawing from bin stock of material for shipment and delivery or movement to disposal. Man-hours expended and work units accomplished that are to be counted in this cost account will include the following functions:

(1) Drawing stock from bin locations incident to an issue and placing material in tote pans or other modes for movement to shipping or local delivery

(2) Handling of documents incident to the issuing of material from bin stock

(3) Drawing stock from bin locations for issue to SERV-MARTS, shop stores or disposal

(4) Direct (first level) supervision of the foregoing operations

Exclusions. Man-hours and work units to be excluded from this cost account are those for the following functions:

(1) Physical handling and movement of material from one bin location to another for the purpose of consolidating stocks or as a result of stock number changes (see Cost Account #2131, Care of Material in Storage)

(2) Physical handling and movement of material from one location to another incident to relocating bin storage on a project/scheduled basis (see Cost Account #2132, Re-warehousing)

(3) Issue of less than unit pack quantity when made from other than bin area (see Cost Account #2122, Bulk Issue Operations)

(4) Physical handling and loading or unloading material for movement to or from preservation, packaging and packing areas when such operations are related to the care of material in storage (see Cost Account #2131, Care of Material in Storage)

(5) Physical handling and issue functions performed in SERVMARTS or shop stores operations (see Cost Accounts #2142, SERVMARTS, and #2147, Shop Stores Operations)

(6) Loading of disposal material for movement to disposal area (see Cost Account #2124, Shipping)

(7) Second level and above supervision, clerical and service support that is applicable to this function or one or more other functional areas in the receipt, packing and issue operations (see Cost Account #2129, Incoming Storage, Packing and Issue Support)

Work Unit. Line Items Issued

(1) Definition. Line items on issue documents for which the issue quantity is transportable on the AMHS line, including transfers to SERVIMARTS, shop stores and disposal during the reporting period.

(2) Point of Count. Upon completion of the processing of the issue document in bin storage, or as an alternative, at the last work center handling the material (i.e., Shipping). If the alternative is used, only line items of bin material issued are to be counted under this account, excluding line items of bulk material issued.

(3) Backlog. Line item requisitions (1348-1) for binable material awaiting issue processing in the Material Department at the end of the reporting period.

2125 LOCAL DELIVERY

Scope. This cost account includes tasks performed and services purchased to effect the movement of material to other organizations on or contiguous to the host military base. Movements between geographically separated elements of the reporting activity are counted when such movements are for purposes other than rewarehousing or repositioning of material. Man-hours expended for the following tasks are counted:

(1) Accepting, consolidating, and spotting material at local delivery work stations

(2) Physical handling at shipping work areas incident to preparing material for local delivery

(3) Checking and loading material for local delivery

(4) Securing material on transportation equipment

(5) Direct operating time for operators of organic transportation equipment, such as Navy-owned trucks.

(6) Direct clerical support

(7) Direct supervision of the foregoing operations

Man-hours excluded from measurement in this cost account are those for:

(1) Rewarehousing of material (see Cost Account 2132, Rewarehousing)

(2) Repositioning material between work areas (see Cost Account 2193, Movement of Material)

(3) Movements to Navy operated water or aerial ports which are part of the host military base. (See Cost Account 2193, Movement of Material)

Work Unit. Measurement ton (1 M/T = 40 cu. ft.)

(1) Definition. Work units are computed using the cubic measurement of each piece or shipment unit counted. Actual measures will be used to the maximum extent possible. Work units counted are those measurement tons loaded for final delivery.

(2) Point of Count. Upon final loading for local delivery (exclude work units in 2124, Shipping; 2151, Outgoing Water Cargo Operations; 2126, Container Stuffing; and 2601, Outgoing Air Cargo Operations).

(3) Backlog. Measurement tons awaiting final loading at the end of the reporting period.

2190 GENERAL STORAGE AND WAREHOUSING SUPPORT

2191 GENERAL STORAGE AND WAREHOUSING SUPPORT

Scope. This cost account includes the overall supervision (second level and above), clerical and support service type operations performed by personnel that are not readily identifiable to specific storage and warehousing operations within the 2100 series of cost accounts (e.g., civilian staff of the Material Department directorate).

Work Unit. This cost account is not measured by a specific work unit.

2192 LABOR AND EQUIPMENT OVERHEAD

Scope. This cost account includes supervisory and clerical operations performed by personnel of the labor and equipment branch (or equivalent) in furnishing laborers, high lift truck operators and other ungraded personnel as required for activity supply functions. Man-hours expended that are to be counted in this cost account will include the following functions:

(1) Determining and distributing transportation and weight handling equipment required for activity supply functions

(2) Residual labor of the labor pool of ungraded personnel not permanently assigned to other organizational components, including the standby time of such personnel

(3) Miscellaneous services performed by labor and equipment personnel not otherwise classified

(4) Operation and warehouse elevators by regularly assigned personnel

(5) Operating and maintenance costs of materials handling equipment used in supply operations, and not assigned to other specific 2100 cost accounts

Exclusion. Man-hours for the operation of MHE and other vehicular equipment assigned to other specific 2100 series cost accounts are to be excluded.

Work Unit. This cost account is not measured by a specific work unit.

2193 MOVEMENT OF MATERIAL OPERATIONS

Scope. This cost account includes the physical movement of material by modes of local activity transportation other than forklift trucks, such as straddle trucks, mules, open bed trucks, and transportors, between work areas covered by the Storage and Warehousing series of cost accounts.

Exclusions. This cost account excludes the loading and unloading of material at pickup and delivery points. These expenses will be charged to the functional accounts appropriated to where the loading and unloading operations are performed.

Work Unit. Loaded Pallets Moved

(1) Definition. Total number of pallets loaded with supply material moved between storage and/or packing locations, and/or storage/packing and shipping locations which are moved by modes of local activity transportation other than forklift trucks, during the reporting period.

(2) Point of Count. Upon completion of the movements accomplished during the reporting period.

(3) Backlog. Will not be reported.

2200 STOCK CONTROL

2210 CUSTOMER SERVICE

2211 CUSTOMER SERVICE

Scope. This cost account includes receiving and recording material request documents; screening of request papers for accuracy and completeness of data other than accounting information; processing request documents to stock control requirement division; maintaining liaison between ships/supply departments of other activities in the vicinity and the supply activity; forwarding action copies of request documents and passed requisitions when required; maintaining central requisition files; conducting issue follow-ups as required in answering requests for shipping information from without the supply activity; providing status information on all material requests except those requisition files physically located in Receipt Control component; direct supervising of the foregoing operations and overall supervision of all customer service functions. This cost account includes manually processed Mobile Logistics Support Forces requisitions, but excludes processing requisitions in shop stores, ready supply stores or SERVMARTS, maintaining records of cash sales and when actions above are processed via direct input to automatic data processing equipment with no manual research or reprocessing.

Work Unit. Line items processed manually or reprocessed

(1) Definition. Line items on scheduled material request documents specified, or their equivalents such as follow-ups, cancellation, etc., processed during the reporting period (excluding line items processed in shop stores, ready supply stores, SERVMARTS and items processed automatically):

<u>Requests</u>	<u>Form No.</u>
DOD Single Line Item Requisition System Document (Manual)	DD Form 1348
DOD Single Line Item Requisition System Document (Mechanical)	DD Form 1348M
Requisition and Invoice/Shipping Document	DD Form 1149
NAVSUP Single Line Item Consumption/ Requisition Document (Manual)	NAVSUP Form 1250-1
Speedletters	
TWX Messages	
Telephone Requisitions, Requisition Status and Stock Status Requests	

(2) Point of Count

a. Naval Supply Centers - to be accumulated from Daily Program Processing statistics as follows:

(a) Edit exceptions output for manual review from appropriate programs excluding those exceptions not manually reviewed

(b) Manually input demands/follow-ups, cancellations, etc., not processed through normal automated means

b. All others - upon completion of the scheduling and editing operations for scheduled request documents, and upon filing the copy of the requisition in the completed requisition for unscheduled requisitions

(3) Backlog

a. Naval Supply Centers - summary count of all outstanding exceptions and new manual documents not yet processed.

b. All others - will not be reported.

APPENDIX D

OPERATING PROCEDURES RELATED TO RECEIVING,
PAPERWORK PROCESSING, INSPECTION
AT MARE ISLAND NAVAL SHIPYARD

APPENDIX D

CURRENT OPERATING PROCEDURES FOR RECEIVING VENDOR SUPPLIED MATERIAL VIA COMMERCIAL CARRIER

LOCATION: DOOR 3 EAST SIDE BLDG 483

COMPLIMENT: (1) WG-5

BACKGROUND: Receives all freight from commercial sources (except UPS, mail, and special pickups). Unloads commercial trucks; obtains routing for material not accepted at Bldg. 483; i.e., gas cylinders, bar stock, plate, lumber, oversize material, and hazardous material; coordinates unloading with Code 570.2 personnel. Unloads some system material, but does not process. Forwards to Government Section.

PROCEDURES:

1. Unload truck.
2. Check container count against freight bill; perform inspection for visible damage; sign freight bill, annotating appropriately, and release driver.
3. If over, shortage, or damage exists, prepare Freight Data Sheet (O,S,D), forwarding all applicable paperwork to Traffic Services, Code 570.03, for action. Retain material in Receiving Bay.
4. Pull receipt documents, assign IR Number, annotating receiving documents and containers appropriately.
5. Forward receiving documents to Code 525.3 for action.
6. Locate material in appropriate holding area, pending delivery instructions.
7. If material cannot be identified, prepare 12ND MINS 4430/12; forward white and pink copies with receiving documents, if available, to Code 525.3 for disposition.
8. Attach green and hard back of 12ND MINS 4430/12 to material, and locate in appropriate holding area, pending delivery instructions.

NOTE: Material is not counted or verified per packing list inspection, except BPA shipments. Boxes are only opened when receipt documents are not attached to the outside of the container.

9. Miscellaneous related duties:

a. Provide status on material scheduled for delivery via commercial carrier.

b. Issue material on demand.

c. Prepare MRT on Level I Transship material, ships, and tenant activity shipments.

d. Assist UPS receiver when caught up.

CURRENT OPERATING PROCEDURES FOR RECEIVING VENDOR
SUPPLIED MATERIAL VIA UNITED PARCEL SERVICE (UPS)

LOCATION: DOOR 3 - EAST SIDE BLDG 483 - Partial conveyor system in operation, racks set up for holding small material pending delivery instructions.

COMPLIMENT: (1) WG-5 PLUS 2 PART-TIME EMPLOYEES WHO WORK A TOTAL OF 15 M/H PER WEEK.

BACKGROUND: Receives all material from daily UPS truck delivery. Receipts include system, commercial vendor supplied contract/purchase order material, miscellaneous Shipyard codes, ships, and tenant activities.

PROCEDURES:

1. Step 1 - Receiving

a. UPS driver prepares a delivery log as material is taken off the truck, listing UPS shipper number and total piece count. Receiver signs when delivery is complete.

b. Receiver counts containers as they are received, segregating material to appropriate pallets and/or racks.

c. Receiver verifies piece count on delivery log, signs, and releases driver.

d. If shortage, damage, or possible shortage (carton shows evidence of having been opened), annotate delivery log appropriately.

2. Step 2 - Processing

a. Miscellaneous Shipyard codes, ships, tenant activities, TARGET, Level I, Navy stock (SX/HX), and BPA, C.O.D.

(1) Checks containers for receiving document (DD250, 1348-1, packing list). If not attached to the outside of the container, opens container and searches for document.

(2) Counts and verifies material on C.O.D. and BPA shipments only.

(3) Assigns Inspection Record (IR) 12ND MINS 4430/12 number; annotates container and receiving document with IR number, pieces, and weight. If no receiving document available, prepares 12ND MINS 4430/12 (IR), attaches green and hard back to material, forwards white and pink copies to Receipt Liaison Section, Code 525.3, for disposition.

(4) Locates material in applicable holding area.

(a) Miscellaneous Shipyard codes, ships, and tenant activities

1 Prepares 12ND MINS 4430/12 for miscellaneous Shipyard codes showing routing. Forwards white and pink copies, with receipt papers, to Code 525.3 for reporting purposes, when required. Attaches green and hard card to material and routes to delivery.

(b) Ships and tenant activities

1 Prepares Material Route Tag (MRT) to deliver material to ships and tenant activities. Attaches to material, with receiving documents, and forwards to delivery.

2 When routing is not known, prepare 12ND MINS 4430/12, and forward, with receiving documents, to Code 525.3 for disposition.

3 Attaches green and hard back of 12ND MINS 4430/12 to material and locates in applicable holding area pending delivery instructions.

(c) BPA

1 Opens box, counts and verifies material.

2 Assigns IR Number, circles quantity, stamps "Received and Accepted at Mare Island," and forwards receipt documents to BPA clerk, Code 525.3, for action.

3 Annotates IR Number on container, and locates, pending delivery instructions.

(d) C.O.D.

1 Opens box, counts, and verifies material is shipped as billed by performing a packing list inspection.

2 Stamps driver's delivery ticket and receipt papers "Received and Accepted at Mare Island," and directs driver to C.O.D. clerk for payment.

3 C.O.D. clerk pulls Number 5 copy of 1348-1, and forwards to receiver.

4 Receiver pins, and routes material to delivery, or holds for special pickup by end user. This is the only type of material receiver pins.

(e) TARGET/Navy stock (HX/SX)

1 Receiver identifies material to TARGET, Navy stock.

2 Pulls receiving documents.

3 Assigns IR Number, annotating receiving documents and containers appropriately.

4 Hand carries receipt documents to Code 525.3, advising cognizant clerk that material has been received and places papers in "Hot Box."

5 Locates material in TARGET Bay.

NOTE: Containers are not routinely opened, nor material counted or verified.

(f) Level I/Level I Transship

1 Receiver identifies material to Level I.

2 Assigns IR Number, annotating receiving documents and containers appropriately.

3 Forwards receipt documents to Code 525.3 for action.

4 Locates material in Level I Bay.

a If identified as Level I Transship, prepare MRT, attach to material with receiving documents, and forward to Transship area for delivery to Bldg. 207.

(g) Navy stock (HX/SX)

1 HX Stock

a Identify and locate material in TARGET Bay. Does not pull paperwork or prepare MRT. Bldg. 215 expediter makes material pickups daily.

2 SX Stock

a Identify, pull receiving documents, assign IR Number, and forward receiving documents to Code 525.3 for action.

b Locate material in TARGET Bay pending delivery instructions.

(h) System Material

1 Route to Government Section for processing.

(i) Vendor Supplied Material Under Contract/Purchase Order

1 Locate receiving documents.

2 Assign IR Number, annotating receiving documents and containers appropriately.

3 Forward receiving documents to Code 525.3 for action.

4 Locate material in appropriate holding area pending delivery instructions.

a If no receiving documents available, prepare 12ND MINS 4430/12; attach green and hard back to container, and locate in appropriate holding area pending delivery instructions.

b Forward white and pink copies of 12ND MINS 4430/12 to Code 525.3 for disposition.

3. Miscellaneous related duties:

(a) Assist Commercial Freight receiver in his absence and when work is caught up.

(b) Provide status on material shipped via UPS.

(c) Pull material from racks after five days and locate in Frustrated Material area.

(d) Issue material on demand.

(e) Identify hazardous/asbestos bearing material when information on receiving documents/ material/containers indicates, and affix applicable labels.

CURRENT OPERATING PROCEDURES FOR RECEIVING SYSTEM MATERIAL
VIA MAIL

LOCATION: DOOR 4 EAST SIDE BLDG 483 - Conveyor system is intact.

COMPLIMENT: (1) WG-5 PLUS 2 AIDES WHO WORK A TOTAL OF 28 M/H PER WEEK.

BACKGROUND: Receives and processes all parcel post shipments of system material and multipacks delivered by Naval Supply Center, Oakland truck. Mail delivery is made daily by Code 570.2 driver, who picks up from the post office in the morning. Oakland truck makes a daily delivery, usually in the morning. Material is placed in bins at the foot of the conveyor for processing.

PROCEDURES:

1. Step 1 - Matching

a. Pull material from receiving bins; segregate by priority and place on conveyor line.

b. Open box.

c. Pull receipt documents.

e. Match to image document in DOD pending file.

f. If quantity shown on receiving document is different from that shown on image document, annotate image document "CUT," amount received, and julian date. Retain Number 2 copy in DOD file as a suspense document. Remaining copies of image document marked "CUT" are attached to material with receiving documents.

g. Place container with documents on conveyor line to be processed.

2. Step 2 - Processing

a. Count material and verify by stock number.

b. If different in quantity or stock number, annotate customer copy (Number 5) of receiving document. Annotate routing from information on image document, sign and date.

c. Attach Number 5 copy of receiving document and Number 5 copy of image document to container and route to delivery.

d. Pull Number 3 copy of receiving document and Number 3 copy of image document; forward to Code 525.3 for reporting purposes. Annotate any difference in quantity.

(1) If no receiving document is available:

(a) Prepare 12ND MINS 4430/12.

(b) Forward white and pink copies with image document to Code 525.3 for action.

(c) Attach green and hard back to material and locate in appropriate holding area, pending disposition instructions.

(2) If no image document is available:

(a) Prepare 12ND MINS 4430/12.

(b) Pull Number 5 copy of receipt document, annotate routing, if known, attach to material, and route to delivery.

(c) Forward white and pink of 12ND MINS 4430/12, with remaining copies of receiving document to Code 525.3 for action.

(d) If routing is not known, attach green and hard back to material, and locate in appropriate holding area, pending disposition instructions.

(3) If ship or tenant activity:

(a) If routing is known, prepare MRT; attach to material and route to delivery.

(b) If routing is not known, prepare 12ND MINS 4430/12, forward white and pink copies with receipt document to Code 525.3 for action. Attach green and hard back to material and locate in appropriate holding area, pending disposition instructions.

3. Miscellaneous related duties

a. Repackage material from multipacks when required.

b. Provide status on system material.

c. Weigh trucks.

d. Assist System freight receiver in his absence, and when line is caught up.

CURRENT OPERATING PROCEDURES FOR RECEIVING SYSTEM MATERIAL
VIA QUICKTRANS, NAVY SUPPLY CENTER, OAKLAND BAY AREA LOCAL
DELIVERY (BALD), AND COMMERCIAL CARRIER

LOCATION: DOOR 4 WEST SIDE BLDG. 483

COMPLIMENT: (1) WG-6 PLUS (1) WG-6 "FLOATER" WHO WORKS
BETWEEN FREIGHT, MAIL LINE

BACKGROUND: Receives all material shipped via QUICKTRANS,
Naval Supply Center, Oakland Bay Area Delivery (BALD), and
system material delivered via commercial carrier daily.

PROCEDURES:

1. Receiving and Processing

a. Unload truck.

b. Check container count against freight bill/
manifest.

(1) When delivered by commercial carrier,
check for overage, shortage, and visible damage. Annotate
freight bill appropriately, and release driver.

(2) If transportation discrepancies exist,
prepare Freight Data Sheet (O,S,D) and forward, with receiv-
ing documents, to Traffic Services, Code 570.03, for action.

c. Pull receipt documents; match to image
documents from pending file.

d. Pull Number 5 copy of receipt document
and Number 5 copy of image document; attach to material and
route to delivery.

e. Pull Number 3 copy of receipt and image
documents and forward to Code 525.3 for reporting purposes.

f. If quantity on receiving document is
different from quantity shown on image document, process
"CUT."

g. If receiving document is not available:

(1) Prepare 12ND MINS 4430/12.

(2) Forward white and pink copies with
image document to Code 525.3 for action.

(3) Attach green and hard back to material
and locate in appropriate holding area, pending disposition
instructions.

h. If image document is not available:

(1) Prepare 12ND MINS 4430/12.

(2) Pull Number 5 copy of receiving document, annotate routing.

(3) Forward white and pink of 12ND MINS 4430/12, with remaining copies of receiving document to Code 525.3 for action.

(4) If routing is not known, attach green and hard back to material, and locate in appropriate holding area, pending disposition instructions.

i. If ship or tenant activity:

(1) If routing is known, prepare MRT; attach to material and route to delivery.

(2) If routing is not known, prepare 12ND MINS 4430/12; forward white and pink copies with receipt documents to Code 525.3 for action. Attach green and hard back to material and locate in appropriate holding area, pending disposition instructions.

2. Miscellaneous related duties

a. Assist commercial air freight receiver in his absence and when work is caught up.

b. Provide status on material scheduled for delivery by QUICKTRANS.

CURRENT OPERATING PROCEDURES FOR RECEIVING MATERIAL VIA
COMMERCIAL AIR FREIGHT, INSURED, REGISTERED, AND CERTIFIED
MAIL, AND SPECIAL PICKUP OF SYSTEM AND VENDOR SUPPLIED
MATERIAL

LOCATION: DOOR 4 WEST SIDE BLDG 483.

COMPLIMENT: (1) WG-6 PLUS (1) WG-5 "FLOATER" WHO ASSISTS
AS REQUIRED

BACKGROUND: Receives and processes all air freight from commercial air lines; all certified, registered, and insured mail; vendor supplied material from parcel post; all Naval Supply Center, Oakland bearer pickups; and special pickups from commercial sources. Routinely opens, counts, and verifies, by packing list inspection, all material received.

PROCEDURES:

1. Unload truck.
2. Segregate by priority, processing Bearer Pickup first.

(a) Bearer Pickup

(1) Check material received against Bearer Pickup Log provided with delivery.

(2) Open box.

(3) Pull receiving document and match with image document from bearer pickup pending file located in work area.

(4) Count, verify stock number, and process receiving and image documents.

(5) Pull Number 5 copy of receiving and image documents and attach to material.

(6) Pull Number 3 copy of receiving and image documents and route to Code 525.3 for reporting purposes.

(7) Prepare MRT.

(8) Advise end user of delivery by telephone.

(9) Route to delivery or hold for pickup by end user.

(b) Air Freight

(1) Count containers, check against air bill, and perform visual inspection for damage; annotate freight bill appropriately and release driver.

(2) If transportation discrepancy exists, prepare Freight Data Sheet (O,S,D) and forward, with receiving documents, to Traffic Services, Code 570.03 for action.

(3) Open box; count and verify material by packing list receiving document on system material.

(4) Assign IR Number, annotating receiving documents and containers appropriately.

(5) Forward receiving documents to Code 525.3 for action.

(6) Locate material in appropriate holding area pending delivery instruction.

(7) Prepare MRT on ship/tenant activities material; route to delivery.

(8) If routing is not known, prepare 12ND MINS 4430/12; forward pink and white copies, with receiving documents, to Code 525.3 for disposition.

(9) Attach green and hard back to material and locate in appropriate holding area for delivery instructions.

(c) Insured, Certified, and Registered Mail

(1) Receive mail delivery.

(2) Process material and receiving documents as appropriate.

(3) Retain Register Receipt for record purposes. (No log is currently kept).

(4) Forward receipt documents to Code 525.3, as applicable, and route material to delivery or hold for pickup by end user.

(d) Special Pickup of Vendor Supplied Material

(a) Receive material from X02 driver; sign trip ticket, when available.

(b) Open box; count and verify material by packing list inspection.

(c) Assign IR Number, annotating receiving document and containers, and forward to Code 525.3 for action.

(d) Notify end user by telephone.

(e) Locate material in appropriate holding area pending delivery instructions.

3. Miscellaneous related duties

a. Provide status on material shipped via subject modes.

b. Custodian of Security Locker.

CURRENT OPERATING PROCEDURES FOR PIN/DELIVERY OF MATERIAL
FROM BLDG. 483

LOCATION: DELIVERY AREA IS LOCATED AT DOOR 13 ON THE SOUTH-
WEST SIDE OF BLDG. 483.

COMPLIMENT: (2) WG-5 - ONE TO PIN, ONE TO LOAD DELIVERY
VEHICLES

PROCEDURES:

1. Step 1 - Pin

- a. Receive delivery papers from Code 525.3.
- b. Find material in holding area, match del-
ivery papers to material by IR Number, and attach to mate-
rial.
- c. Consolidate, palletize, and move to del-
ivery area.
- d. After material has been in holding areas
for five days, move to Frustrated Material area.

2. Step 2 - Load Truck

- a. Set up loads for X02 stake trucks for
delivery to end use.
- b. Set up load of ship/miscellaneous build-
ings not serviced by X02 truck/Bldg 207 for Code 570.2
delivery vehicle.
- c. Set up load for Shop Stores Choreboy
delivery.
- d. Set up load for Bldg. 866 pickup.
- e. Load trucks.

CURRENT OPERATING PROCEDURES FOR PROCESSING COMMERCIAL AND
BPA RECEIPT PAPERWORK IN RECEIPT CONTROL BRANCH, CODE 525.3

LOCATION: Building 483, First Floor, Southeast Corner

COMPLEMENT: (1) Supervisory Supply Clerk, GS-6
(2) Supply Clerks, GS-4
(1) Supply Clerk, GS-3
(1) Supply Clerk, GS-3 TEMPORARY

BACKGROUND: Establish and retain files for Commercial and BPA receipt paperwork; receive, screen and process the accounting for all Commercial and BPA receipts; prepare paperwork for disposition and local inspection items; make copies when necessary of 1348-1 and receipt documents; input local status to MIS/MC Program; notify Code 525.1/2 of problem areas; assist Planners, Progressmen, etc. to locate material/paperwork; answer telephone inquiries; make count of processed.

PROCEDURES:

I. Establish File for Commercial Receipt

A. Receive small folder containing #2 thru #6 1348-1 from Code 530.2.

B. Date stamp folder, ensure no former contract/purchase order number appears and match contract/purchase order number on folder to 1348-1.

C. Place folder in pending commercial file awaiting the receipt package from Code 570.

II. Receipt Package Received (Mail Clerk)

A. Circle order number, date stamp packing list and ensure quantity has been circled by Code 570.

B. Separate BPA, Commercial receipts and receipts that cannot be identified.

C. Pull folder from commercial pending file, and pass folder containing receipt package and 1348-1 to clerks for action.

NOTE: (1) Mail Clerk does not pull folder on BPA receipts.

(2) All clerks make count of work processed for work measurement and analysis of receipts.

(3) Receipts that cannot be identified are forwarded to Code 525.1/2 for action.

III. Process Commercial Receipt Paperwork (Complete Quantity)

A. Pull paperwork from folder and match receipt package to 1348-1.

B. Check for DCAS contract/purchase order (Accept destination).

C. Input PKP/PKN on 12ND MINS 4355/56, Procurement Quality Assurance/Acceptance Report.

D. Annotate on 1348-1; IR number, carton, weight, cube and location.

E. Distribute 1348-1 and receipt package as follows:

1. #2 and #3 1348-1 and receipt package to Code 525.1/2.
2. #4 1348-1 to Code 630.212.
3. #5 1348-1 (annotate shop/building and carton) to Code 570.
4. #6 1348-1 to Code 515.

NOTE: If item is Shop Stores, distribution is the same except for; #3 1348-1 to Code 520.2, #4 1348-1 to Code 525.1/2.

EXCEPTION: If item is ICP receipt, distribution is the same except for; #3 1348-1 to Code 630.212, #4 1348-1 to Code 525.1/2.

IV. Process Commercial Receipt Paperwork (Partial Quantity)

A. Pull paperwork from folder and match receipt package to 1348-1.

B. Strike through quantity and money on "Master" 1348-1 and make five (5) copies, renumbering copies to read "2P thru "6P".

C. On "Master" 1348-1, annotate quantity still due and return to file.

D. On copies of 1348-1 annotate; IR number, carton, weight, cube and location and indicate quantity received.

E. Distribute copies of 1348-1 and receipt package as follows:

1. #2 and #3 1348-1 with receipt package to Code 525.1/2.
2. #4 1348-1 to Code 630.212.

3. #5 1348-1 (annotate shop/building and carton) to Code 570. Flag this copy to alert Code 570 that item is partial shipment.

4. #6 1348-1 to Code 515.

V. Process Commercial Receipt Paperwork - Set Up for Local Inspection

A. Pull paperwork from folder and match receipt package to 1348-1.

B. Determine that item is to be sent to Code 570.11 (Quantity discrepancies, certain commodities, replacement material, etc.).

C. Prepare 4430/12 and stamp all copies "Local Inspection."

D. Input status on form TC487 to MIS/MC Program.

E. Distribute 1348-1, 4430/12 and receipt package as follows:

- (1) White 4430/12, #2 through #6 1348-1, receipt package and copy of contract/purchase order to Code 570.11.
- (2) Hard 4430/12 to Code 525.1/2.
- (3) Pink 4430/12 retain in Code 525.3 folder
- (4) Green 4430/12 destroy.

VI. Commercial Receipts Passed and Returned by Local Inspection

A. Pull folder from Commercial pending file and match to paperwork, which includes white 4430/12, receipt package, copy of contract/purchase order and copies #2, #3, #4 and #6 1348-1, returned from Code 570.11.

B. Take pink 4430/12 from folder and destroy.

C. Distribute 1348-1, 4430/12 and receipt package as follows:

- (1) #2 and #3 1348-1, white 4430/12, receipt package and copy of contract/purchase order to Code 525.1/2.
- (2) #4 1348-1 to Code 630.212
- (3) #6 1348-1 to Code 515.

VII. Commercial Receipts Rejected and Returned by Inspection

A. Pull folder from Commercial pending file and match to paperwork (which includes white 4430/12, receipt package, copy of contract/purchase order, #2 through #6 1348-1 and original and two copies of ROID) returned from Code 570.11.

B. Input local status on TC487 to MIS/MC Program.

C. Distribute paperwork as follows:

(1) Original and one copy of ROID, receipt package, and white 4430/12 to Code 525.1/2 ROID Clerk.

(2) Retain one copy of ROID, #2 through #6 1348-1 and contract/purchase order in file.

VIII. Material To Be Returned To Vendor With Replacement Due

A. Receive ROID with shipping instructions from Code 525.1/2.

B. Pull folder from Commercial pending file, match to ROID and annotate file.

C. Forward ROID to Code 570.11 to ship material.

D. Upon receipt of replacement material, receipt package is set up for Local Inspection.

IX. ROID To Be Cancelled And Material Forwarded To End User

A. Receive from ROID Clerk in Code 525.1/2, original ROID, white 4430/12, receipt package and two copies of Routing Slip with explanation of ROID cancellation.

B. Forward to Code 570.11; original ROID, white 4430/12, receipt package, one copy of Routing Slip, #2 through #6 1348-1 and contract/purchase order.

C. Retain one copy of Routing Slip in file.

D. Upon completion of action by Code 570.11, they will return to Code 525.3; original ROID (with "CANCEL" annotated), white 4430/12, receipt package, #2, #3, #4 and #6 1348-1, and contract/purchase order.

E. Process accounting (see Page 2, III, E.)

F. Cover remaining paperwork with Cancelled ROID and routing slip and forward final package to Code 525.1/2.

X. Commercial Receipts Rejected By End User

A. Receive original and two copies of ROID, #5 1348-1 and MDN from Code 570.11.

B. Prepare folder for commercial file.

C. Forward original and one copy of ROID, one copy of MDN and any tests, certifications etc. to ROID clerk in Code 525.1 and retain remaining paperwork in file.

XI. Material To Be Returned To Vendor With Replacement Due

A. Receive ROID with shipping instructions from Code 525.1/2

B. Pull folder from Commercial pending file and annotate.

C. Forward ROID to Code 570.11 to route/deliver material to building 207 for off yard shipment to vendor.

D. Retain remaining paperwork in file until replacement received.

XII. ROID To Be Cancelled

A. Receive original ROID and Routing Slip with explanation of cancellation from Code 525.1/2.

B. Pull folder from Commercial pending file and forward original ROID, #5 1348-1, MDN and copy of Routing Slip to Code 570.11. Retain one copy of Routing Slip in folder.

C. Receive cancelled ROID from Code 570.11.

D. Pull folder from Commercial pending file, annotate Routing Slip, attach Routing Slip to cancelled ROID and forward completed package to Code 525.1/2.

XIII. Commercial Receipts Needing Disposition Action

A. Pull receipt package, determine disposition action required and prepare 4430/12.

B. Forward white and pink 4430/12 and receipt package to Code 525.1/2 for action.

C. Retain hard and green 4430/12 and copy of receipt document in pending file.

D. Receive package, with requested paperwork included, from Code 525.1/2.

E. Pull folder from Commercial pending file and dispose of green and hard 4430/12.

F. Distribute paperwork as follows:

1. #2 and #3 1348-1, white 4430/12 and receipt package to Code 525.1/2
2. #4 1348-1 to Code 630.212
3. #5 1348-1, pink 4430/12 to Code 570
4. #6 1348-1 to Code 515

NOTE: (1) If material is physically picked up by the end user prior to receiving disposition action from Code 525.1/2, #5 1348-1 and pink 4430/12 is sent to Planner.

XIV. Commercial Receipt - No Receipt Package

- A. Receive white and pink 4430/12 from Code 570.
- B. Pull folder from Commercial pending file and check 4430/12 for complete information to move material. (If not enough information on 4430/12, package goes to local inspection).

C. Distribute 4430/12 and 1348-1 as follows:

1. White 4430/12 and #2 and #3 1348-1 to Code 525.1/2
2. Pink 4430/12 and #5 1348-1 to Code 570
3. #4 1348-1 to Code 630.212
4. #6 1348-1 to Code 515

XV. Commercial Receipts With No Identification On Receipt Package

- A. Date stamp receipt package and put in IMP (Improperly marked) folder for research by Code 525.1/2.

XVI. Direct Delivery Receipts - Commercial Driver (Any Delivery Not Feasible To Off Load At Receiving Building)

- A. Receive receipt package from driver
- B. Pull folder from Commercial Pending file (if no file folder, call Code 530.2 to see if they have 1348-1 and request destination) and make copy of packing list if required.
- C. Prepare 4430/12, pull hard 4430/12, attach direct delivery note to receipt package, give package to driver and direct him to delivery point.
- D. Call delivery point to notify them that driver is coming.
- E. Remaining copies of 4430/12 and one copy of packing list retained in folder.

NOTE: (1) If driver cannot deliver (security area, etc.), no action is taken by Code 525.3. Driver is referred back to Code 570.

XVII. ICP Commercial Receipt - Establish File

A. Receive cards and cross reference slip from Code 525.2

B. Determine quantity to be purchased, pull 1348-1 from System file, annotate order number and unit price on 1348-1 and attach cross reference slip.

C. Prepare folder for Commercial Pending file.

NOTE: (1) If partial quantity to be purchased, establish folder for Commercial pending file and re-establish file in System file.

XVIII. Process ICP Commercial Receipt Paperwork

ICP Commercial Receipt is processed the same as Commercial Receipt with the following exceptions:

A. No 1348-1 in Commercial pending file

1. Pull 1348-1 from System pending file, annotate contract/purchase order number, unit price and total price.

2. Process accounting. (See Page 2, III, E, and exception)

B. No 1348-1 in Commercial pending or System File.

1. Prepare 4430/12 for disposition and forward white and pink 4430/12 to Code 525.2.

2. Retain green and hard 4430/12 with copy of incoming receipt document.

3. When Code 525.2 returns disposition, process accounting. (See Page 2, III, E, and exception).

XIX. Establish File for BPA Receipts

A. Receive 1348-1 from Code 530.2, check vendor name to BPA number and assure that buyer has stamped and signed 1348-1.

B. Prepare folder for file, date stamp and place folder and 1348-1 in BPA pending file.

XX. Process BPA Receipts Complete Quantity

A. Match receipt package to folder from BPA pending file.

B. Verify that Code 570 has stamped, signed and dated all copies of packing list and circled quantity received, and make copy of packing list if required.

C. Annotate on 1348-1, IR number, carton, weight, cube and location (taken from packing list)

D. Distribute 1348-1 and receipt package as follows:

1. #2 and #3 1348-1 (stamped and signed by buyer) and original packing list (with Code 570 signatures) to Code 630.113.

2. #4 1348-1 to Code 630.212

3. #5 1348-1 (annotate shop/building and carton) to Code 570.

4. #6 1348-1 and copy of packing list to Code 525.1/2.

XXI. Process BPA Receipts Partial Quantity

A. Match receipt package to folder from BPA pending file and remove applicable 1348-1.

B. On 1348-1, line through money and quantity, make five copies (#2 through #6) of 1348-1, change quantity on 1348-1 copies to reflect the quantity still due and return copies to BPA pending file.

C. Change quantity on Master 1348-1 (#2 through #6) to reflect quantity received and indicate "Partial."

D. Distribute 1348-1 and paperwork the same as BPA Receipts Complete Quantity (See XX, D)

NOTE: (1) On Shop Stores BPA receipts, all steps are the same except: #4 1348-1 to Code 520.2.

(2) If receipts involve more than one supplemental address, ensure all 1348-1's go to the same delivery point. If split delivery, flag 1348-1 so receiving floor will be aware.

XXII. Process BPA Receipt Paperwork - Set Up For Local Inspection

A. Match receipt paperwork to folder from BPA pending file.

B. Determine that item is to be sent to Inspection, prepare 4430/12 and stamp all copies "Local Inspection."

C. Input status on form TC487 to MIS/MC program.

D. Distribute paperwork as follows:

1. #5 and #6 1348-1, white 4430/12 and receipt document to Code 570.11.
2. Hard 4430/12 to Code 525.1
3. Pink and green 4430/12, #2, #3 and #4 1348-1 retained in BPA pending file.

NOTE: (1) ROID's on BPA receipt are handled basically the same as Commercial Receipts Rejected and Returned by Inspection (See page 3, VII).

CURRENT OPERATING PROCEDURES FOR PROCESSING SYSTEM RECEIPT
PAPERWORK IN RECEIPT CONTROL BRANCH, CODE 525.3

LOCATION: Building 483, First Floor, Southeast Corner

COMPLEMENT: (1) Supply Clerk, GS-4

BACKGROUND: Receive, screen, file and process accounting for System receipts; make copies when necessary of 1348-1 and receipt documents; prepare paperwork for receipts needing disposition action; assist Planners, Progressmen etc. to locate material/paperwork; answer telephone inquiries; make count of work processed.

PROCEDURES:

I. Establish File for Routine System Receipt

- A. Receive DPO 1348-1 run in sequence
- B. Separate, screen, and file 1348-1's in System pending file.

II. Establish File for Walk Thru and Bearer Pickup Receipt

- A. Receive 1348-1's, sequence and file in Walk Thru Bearer Pickup File.

NOTE: (1) Make count of all work processed for work measurement.

III. System Receipts Complete Quantity

- A. Receive and match incoming 1348-1 and pending 1348-1 from Code 570.
- B. Pull #3 incoming 1348-1 and #3 pending 1348-1 and forward to Code 630.212.
- C. #6 pending 1348-1 to Code 515
- D. Remaining copies of pending and incoming 1348-1 are destroyed.

IV. System Receipts Partial Quantity

- A. Receive and match incoming 1348-1 and pending 1348-1 from Code 570.
- B. Annotate on #1 pending 1348-1; quantity received, routing identifier, julian date received and suffix.
- C. Pull #3 incoming 1348-1 and #4 pending 1348-1 (change #4 pending 1348-1 to read "3P").

D. Change quantity on "3P" pending 1348-1 to reflect quantity received and forward to Code 630.212.

E. #6 pending 1348-1, with quantity change to Code 515.

F. #1 and #3 pending 1348-1 returned to System pending file and attach to #2 pending 1348-1.

V. System Receipts for Disposition Action

A. Receive white and pink 4430/12 and incoming receipt document from Code 570.

B. Make copy of 4430/12 and incoming receipt document for tickler file.

C. Forward white and pink 4430/12 and original incoming receipt document to Code 525.2 for action.

D. Receive from Code 525.2; white and pink 4430/12 and 1348-1.

E. Annotate on pink 4430/12 (in large letters). routing instructions and forward to Code 570 to route/deliver material.

F. White 4430/12 and copy of incoming receipt document, with annotation that Code 525.3 has completed paperwork returned to Code 525.2

NOTE: (1) If material is in the frustrated area, Code 525.3 will check frustrated file for green 4430/12 (which is placed there by Code 570 when item is moved to frustrated area). Annotate green 4430/12 of action taken and forward to Code 525.2.

VI. System Receipt - No Pending 1348-1 in System File.

A. Receive incoming 1348-1 from Code 570 and hold three to five days for arrival of pending 1348-1.

B. If no pending 1348-1 can be located, handscribe pending 1348-1 from information on incoming 1348-1 and process accounting. (See page 1, III).

CURRENT OPERATING PROCEDURES FOR PRELIMINARY SCREENING OF
SYSTEM AND VENDOR SUPPLIED MATERIAL

LOCATION: Inspection line is located on the West Side of Bldg 483 near the firewall. Test Bay, TARGET Bay, and Level I Bay contain material under preliminary screening prior to receipt inspection by Code 130 or delivery to end use. Reject Bay contains material that has been found to be discrepant during preliminary screening or after delivery to end use, and is pending disposition by Code 525/cognizant Shipyard code.

COMPLIMENT: (3) WG-7 General Equipment Inspectors

BACKGROUND: Performs preliminary screening of Nuclear application material, including Naval Nuclear Propulsion Plant material, Navy stock (SX1, SX3), all TARGET material, and Shop Store 89 material; prepares necessary paperwork (Stage I); performs preliminary screening of Level I material; pulls samples and prepares Laboratory Test Requests as required; screens replacement material for contract compliance; evaluates material returned from end user on MDN and prepares ROID; screens vendor supplied material where acceptance is at destination; processes split deliveries; gives technical assistance to identify material; is action code for the Unsatisfactory Material Reporting (UMR) Program; screens and provides technical assistance where intransit damage to material is suspected (transportation discrepancies).

PROCEDURES:

1. Naval Nuclear Propulsion Plant material, Navy stock (SX1, SX3)

Ref: (a) Shipyard Nuclear Power Manual Vol XI

a. Receive document package from Code 525.3, 1348-1 from Screening and Identification, Code 580.3 (Rollback), and DOD pending file (SX1, SX3 from the system).

b. Prepare Stage I, logging in appropriate record book.

c. Perform preliminary screening of material for the following characteristics:

- (1) shipping damage/
- (2) packaging/markings meet contract requirements/
- (3) software is available and complete
- (4) material conforms to contract requirements

by size, type, part number, etc.

NOTE: No actual testing of material to MILSPEC is performed by Supply Department personnel.

d. If material meets above characteristics, pin delivery papers and Stage I to container; call cognizant code for pickup or route to delivery.

e. If material fails any of the above inspection characteristics, notify Code 139. Code 139 will review and advise further action.

f. If further Supply Department action is required, prepare ROID; tag, and locate material in appropriate holding area pending further disposition.

2. Level I/Level I Transship

Ref: (a) NAVSEA 0948-045-6010 (nuclear)
(b) NAVSEA 0948-045-7010 (non-nuclear)
(c) NAVSHIPYDMAREINST 4855.3B (Quality Assurance Manual)

Encl: (1) NAVSHIPYDMAREINST 4855.3B CH 38 (Assurance of Quality of Tungsten and Argon for Welding)
(2) Process Instruction 0091-811 (Inspection, Receipt, SubSafe Electrical Connectors)
(3) Process Instruction 0091-812 (Inspection Receipt Level I (MIL-F-22606) Compressed Gas Flasks)
(4) Process Instruction 0909-841A (Inspection, Receipt; Valves, Level I (Non-nuclear))
(5) Process Instruction (Silver-Brazing Alloy Level I (Non-Nuclear) Receipt Inspection)
(6) NAVSHIPYDMAREINST 4855.3B Ch-38 (Sampling of Bare Electrodes or Rods (Spools or Coils))

Background: References (a) and (b) as implemented by reference (c) direct industrial shipyards to inspect Level I material prior to use, regardless of source inspection.

Procedures:

- a. Receive document package from Code 525.3.
- b. Open box.
- c. Perform preliminary screening of material for the following:
 - (1) shipping damage
 - (2) packaging/markings meet contract specifications

(3) software is available and complete

(4) material conforms to contract requirements by size, type, part number, etc.

(5) Pull samples when required and prepare Laboratory Test Request.

(6) Locate main body of material in Test Bay, tag, and send samples with Laboratory Test Request to Shipyard laboratory.

(7) If material meets above characteristics, pin delivery papers to material, and route to delivery.

(8) If material fails any of the above characteristics, prepare ROID.

(9) Forward ROID and receiving documents, test reports, etc., to Code 525 for resolution; tag, and locate material in Reject Bay.

3. Special Commodity Requiring Preliminary Screening Prior to Receipt Inspection/Delivery to End Use

Ref: (a) Shipyard Nuclear Power Manual Vol II, IX, XII

Encl: (1) Acceptable Products List (Guideline of special commodity material)
(2) Guidelines for HEPA Filter
(3) Quality Control of Shipyard Manufactured Rubber Products
(4) Code 2350 Memo Ser-15 of 22 Jan 1976 (Polyvinyl Chloride Sheets)
(5) SUPDEPTINS 9290.1A (Weight and Moment Control; procedures for)
(6) MATLIDIVINS 4454.2B (Receipt Inspection and Storage Control of Submarine Flexible Rubber Hose; procedures for)
(7) MATLIDIVINS 9110.1D (Resilient Mounts, Receipt Inspection and Storage)
(8) Code 300 memo 385-447-73 of 11 Sep 1973 (Abrasive Blasting Material; acceptance test of)

Procedures:

- a. Receive document package from Code 525.3.
- b. Open box.
- c. Perform preliminary screening of material; pull samples, as required.

d. Locate main body of material in Test Bay; tag, and send samples with Laboratory Test Request to Shipyard laboratory.

e. If material passes preliminary screening and test, pin delivery papers to material and route to delivery.

f. If material fails preliminary screening/test, prepare ROID.

g. Forward ROID and document package, test reports, etc., to Code 525 for resolution.

h. Tag, and locate material in Reject Bay.

i. When disposition is received from Code 525, take appropriate action.

NOTE: No actual testing of material to MILSPEC is performed by Supply Department personnel. Examination is limited to visual defects only.

4. Vendor Supplied Material Found to be Discrepant

a. Vendor Supplied Material Found to be Discrepant During Preliminary Screening

(1) Prepare ROID detailing discrepancy.

(2) Forward, with applicable documentation, to Code 525 for resolution.

(3) Tag, and locate material in Reject Bay.

b. Vendor Supplied Material Found to be Discrepant After Delivery to End User (MDN)

(1) Receive material with MDN.

(2) Review material per contract/purchase order.

(3) Prepare ROID and forward, with applicable documentation, to Code 525 for resolution.

(4) Tag, and locate material in Reject Bay.

5. Replacement Material

a. Receive document package from Code 525.3

b. Review material for conformance to current contract requirements.

c. If material does not conform to contract requirements, prepare ROID.

d. Tag, and locate material in Reject Bay pending disposition by Code 525.

6. Split Deliveries

a. Receive document package from Code 525.3.

b. Sort and repack, as necessary, according to end use.

c. Return document package to Code 525.3 for action.

d. When delivery package is received, route material to delivery.

7. Unidentified Material

a. Receive applicable document package from Code 525.3.

b. Open box; review material for identification.

c. Advise Code 525.3 of findings.

8. Transportation Discrepancies

a. Perform visual inspection of material where intransit damage is suspected at the request of Code 570.03.

9. Unsatisfactory Material Reporting Program (UMR)

Ref: (a) NAVSEAINST 4855.7 (Unsatisfactory Material; reporting of)
(b) SUPDEPTINST 4855.5 (Discrepant Material Reporting)
(c) Code 502 memo dtd 3 Dec 1976 (Report of Meeting held 3 Dec 1976 to Discuss the Shipyard Unsatisfactory Material Reporting Program (UMR))

Procedures:

1. Review ROIDS for the following:

a. Recurring discrepancies from an individual vendor.

b. DCAS inspected material

c. Naval Nuclear Propulsion Plant and TARGET material

d. Level I material.

e. Navy stock fund material.

f. End use of material is shipboard application

2. Prepare 12ND MINS 4855/244, Discrepant Material Report, and forward to the Shipyard UMR Coordinator, Code 136.11.

LIST OF REFERENCES

1. Department of Defense, Department of Defense Material Distribution Study, 1 July 1978.
2. Grant, Robert D., Commander, Supply Corps, United States Navy, Special Projects Officer, NSC Oakland, Personal Interview, November 1979.
3. Naval Material Command letter to Chief of Naval Operations, Subject: Feasibility Study for Shore Establishment Realignment, 4 August 1978.
4. Public Works Center, San Francisco Bay Fund Status Report, -Customer Open/Closed Accounts, report no. 3A-86, dated 30 September 1979.
5. Public Works Center, San Francisco, PWCSANFRAN Instruction 7030.1D, 13 March 1979.
6. Receiving Department, Mare Island Naval Shipyard, Work unit measurement report.

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